```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM protein -
                                                                                                                                                                                                                                              score g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BB BB
                                             2063
2063
1922
1922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq
                                                                                                                                                                                                                                         No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-500-376-8
2063
1 MWSWRCLLFWAVLV
                                                                                                                                          Query
Match
        100.0
100.0
93.2
93.2
93.2
93.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      June 11, 2003, 16:02:34; Search time 148 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4569144 seqs, 644733110 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pending_Patents_AA_Main: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MWSWKCLLFWAVLYTATLCT.....KPDSYPLFDGIFCSHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /cgn2_6/ptodata/1/paa/PCTUS_COMB.pep:
/cgn2_6/ptodata/1/paa/US06_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /cgn2_6/ptodata/1/paa/US082_COMB.pep:*
/cgn2_6/ptodata/1/paa/US083_COMB.pep:*
/cgn2_6/ptodata/1/paa/US084_COMB.pep:*
/cgn2_6/ptodata/1/paa/US085_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cgn2_6/ptodata/1/paa/US080_COMB.pep:*
/cgn2_6/ptodata/1/paa/US081_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cgn2_6/ptodata/1/paa/US07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /cgn2_6/ptodata/1/paa/US088_COMB.pep:*
/cgn2_6/ptodata/1/paa/US089_COMB.pep:*
/cgn2_6/ptodata/1/paa/US090_COMB.pep:*
/cgn2_6/ptodata/1/paa/US091_COMB.pep:*
/cgn2_6/ptodata/1/paa/US092_COMB.pep:*
/cgn2_6/ptodata/1/paa/US093_COMB.pep:*
/cgn2_6/ptodata/1/paa/US093_COMB.pep:*
                                                                                                                                                                                                                                                                                                                      /cgn2_6/ptodata/1/paa/US100_COMB.pep:*
/cgn2_6/ptodata/1/paa/US101_COMB.pep:*
/cgn2_6/ptodata/1/paa/US102_COMB.pep:*
/cgn2_6/ptodata/1/paa/US60_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                     /cgn2_6/ptodata/1/paa/US098_COMB.pep:*
/cgn2_6/ptodata/1/paa/US099_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                          /cgn2_6/ptodata/1/paa/US094_COMB.pep:*
/cgn2_6/ptodata/1/paa/US095_COMB.pep:*
/cgn2_6/ptodata/1/paa/US096_COMB.pep:*
/cgn2_6/ptodata/1/paa/US097_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /cgn2_6/ptodata/1/paa/US087_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cgn2_6/ptodata/1/paa/US086_COMB.pep:*
        384
361
361
361
376
                                                                                                                                              띪
        15
15
15
15
    US-09-500-376-8

US-10-062-809-8

US-09-175-683-12

US-09-175-683B-10

US-09-175-684A-10

US-09-175-683-13
                                                                                                                                              ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           summaries
                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (without alignments)
1672.821 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4569144
                                                                                                                                        Description
Sequence 8, Appli
Sequence 8, Appli
Sequence 12, Appl
Sequence 10, Appl
Sequence 10, Appl
Sequence 13, Appl
```

ALIGNMENTS

```
Ş
                                                                                        Ş
                                                                                                                                                                                               ; TYPE: PRT ; ORGANISM: Plasmodium falciparum US-09-500-376-8
                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-500-376-8
                                                                                                                                                                                                                                                                                                                   Sequence 8, Application US/09500376
GENERAL INFORMATION:
APPLICANT: University of Hawaii
TITLE OF INVENTION: Baculovirus Produced Plasmodium Falciparum Vaccine
FILE REFERENCE: A-67984
CURRENT FILING DATE: 2000-02-08
PRIOR APPLICATION NUMBER: US/09/500,376
CURRENT FILING DATE: US/09/500,376
PRIOR APPLICATION NUMBER: US/08/195,705
PRIOR FILING DATE: 1994-02-14
                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS: 16
SOFTWARE: PatentIn version
SEQ ID NO 8
LENGTH: 384
                                                                                                                             Matches
                                                                                                                                                              Query Match
                                                                                                                                               Local
                                                                                                                             384;
61 ENNVMTFNVNVKDILNSRENKRENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDK
                                                                     1 MWSWKCLLFWAVLYTATLCTAGAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQL
                                                                                                                                           Similarity
                                                     MWSWKCLLFWAVLVTATLCTAGAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQL
                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                       version 3.1
                                                                                                                                          100.0%;
                                                                                                                           0;
                                                                                                                                           Score 2063; DB 19; Pred. No. 1.1e-160;
                                                                                                                           Mismatches
                                                                                                                           Indels
                                                                                                                                                        Length
                                                                                                                                                            384;
                                                                                                                       0;
                                                                                                                       Gaps
                    120
                                                     60
                                                                                        60
                                                                                                                         0
```

```
8
                                                                                   QΥ
                                                                                                                    В
                                                                                                                                              δÃ
                                                                                                                                                                                밁
                                                                                                                                                                                                        8
       밁
                                                            밁
                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: PRT; ORGANISM: Plasmodium US-10-062-809-8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 2
US-10-062-809-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: BACULOVIRUS PRODUCED PLASMODIUM FALCIPARUM VACCINE FILE REFERENCE: A-67984-1/RET/TAL/UBC CURRENT APPLICATION NUMBER: US/10/062,809 CURRENT FILING DATE: 2002-06-28 PRIOR APPLICATION NUMBER: US 09/500,376 PRIOR FILING DATE: 2000-02-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Chang, Sandra P.
APPLICANT: Hashimoto, Ann
APPLICANT: Nishimura, Tani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 79
SOFTWARE: PatentIn versi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: US 60/266,281 PRIOR FILING DATE: 2001-02-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                          y Match 100.0%;
Local Similarity 100.0%;
hes 384; Conservative (
       301
                                 301
                                                              241
                                                                                         241
                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                    181
                                                                                                                                                                                 121
                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                              384
                                                                                                                                                                                                                                                                                                                              щ
                                                           IETLYKTVNHKIDLEVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFV
                                                                                                                                                                             FLSSYNYIKDSIDTDINFANDYLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNN
                                                                                                                                                                                                                                                     ENNVMTENVNVKDILNSRENKRENFKNVLESDLIFYKDLTSSNYVVKDPYKFLNKEKRDK 120
                                                                                                                                                                                                                                                                                                               MWSWKCLLFWAVLVTATLCTAGAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKIT
                  SGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CECTKPDSYPLFDGIFCSHHHHHH
                                                                                                                                                                                                                                         ENNVMTFNVNVKDILNSRFNKRENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CECTKPDSYPLFDGIFCSHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             I ETLYKTVNHKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IETLYKTVNHKIDLEVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FLSSYNYIKDSIDTDINFANDVLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNN
                                                                                                                                                                                                                                                                                                MWSWKCLLFWAVLVTATLCTAGAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FLSSYNYIKDSIDTDINFANDVLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENNVMTFNVNVKDILNSRFNKRENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                 falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US/10062809
                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                        Score 2063; DB 24;
Pred. No. 1.1e-160;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               384
                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                        300
                                                                                                                                                                              180
                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
    360
                              360
                                                                                                                      240
                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Chen, Li How
APPLICANT: Meade, Henry
TITLE OF INVENTION: NOVEL MODIFIED MSP-1 NUCLEIC ACID SEQUENCES AND METHODS
TITLE OF INVENTION: FOR INCREASING MRNA LEVELS AND PROTEIN EXPRESSIONS IN
TITLE OF INVENTION: CELL SYSTEMS
FILE REFERENCE: 10275/13401
CURRENT FILING DATE: 1928-10-20
EARLIER APPLICATION NUMBER: US.60/095,649
EARLIER APPLICATION NUMBER: US.60/095,649
EARLIER APPLICATION NUMBER: US.60/062,592
EARLIER FILING DATE: 1998-10-20
NUMBER OF SEQ ID NOS: 13
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 12
LENGTH: 361
TYPE: PRT
ORGANISM: preferabley, a bacterium, virus, or parasite
                                                                                                                    RESULT 4
US-09-175-683B-10
                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , υκφανιζΜ: preferabley, US-09-175-683-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 3
US-09-175-683-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                    Sequence 10, Application US/09175683B GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 12, Applica GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
APPLICANT: Meade, Harry M.

TITLE OF INVENTION: NOVEL MODIFIED NUCLEIC ACID
TITLE OF INVENTION: AND METHODS FOR INCREASING
TITLE OF INVENTION: EXPRESSION IN CELL SYSTEMS
FILE REFERENCE: 10275-134001
                                                           APPLICANT: Chen, APPLICANT: Meade
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                              361
                                                                                                                                                                                                         384
                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                   324
                                                                                                                                                                                                                                                                                                                             264
                                                                                                                                                                                                                                                                                                                                                                                     204
                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                             144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24 AVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \vdash
                                                                                                                                                                                                                                                                                                                                                                                                             н
                                                                                                                                                                                                         H
                                                                                                                                                                                                                                                     DKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCSHHHHH
                                                                                                                                                                                                                                                                                                              VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCERHLDEREECKCLLNYKQEG
                                                                                                                                                                                                                                                                                                                                                                      LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                                                                                                                                                                                                      DKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCSHHHHH
                                                                                                                                                                                                                                                                                              VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                                                                                                                                                                        LNYTYEKSNYEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Application
                                                                                                                                                                                                        384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                        Ŀ
                                                                          HOW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93.2%;
99.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US/09175683A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1922; DB 15;
Pred. No. 3.9e-149;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 15;
                              MRNA LEVELS
                                            SEQUENCES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                              AND PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
```

```
US-09-175-684A-10
                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
US-09-175-684A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         皮
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-175-683B-10
                                                                              SEQ ID NO 10
LENGTH: 361
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 360
                                                                                                                                                                                                                                                                                                                                              Sequence 10, Application US/09175684A GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 10
LENGTH: 361
                                                                                                                                                  APPLICANT: Chen, L1 How
APPLICANT: Meade, Harry M.
APPLICANT: Meade, Harry M.
APPLICANT: Meade, Harry M.
TITLE OF INVENTION: NOVEL MODIFIED MSP-1 NUCLEIC ACID
TITLE OF INVENTION: SEQUENCES AND METHODS FOR INCREASING MRNA LEVELS AND TITLE OF INVENTION: EXPRESSION IN CELL SYSTEMS
FILE REFERENCE: 10275-133001
CURRENT APPLICATION NUMBER: US/09/175,684A
CURRENT APPLICATION NUMBER: US 60/085,649
PRIOR APPLICATION NUMBER: US 60/085,649
PRIOR FILLING DATE: 1998-05-15
PRIOR APPLICATION NUMBER: US 60/062,592
PRIOR APPLICATION NUMBER: US 60/062,592
PRIOR FILLING DATE: 1997-10-20
   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/09/175,683B CURRENT FILING DATE: 1998-10-20 PRIOR APPLICATION NUMBER: US 60/085,649 PRIOR FILING DATE: 1998-05-15 PRIOR APPLICATION NUMBER: US 60/062,592 PRIOR FILING DATE: 1997-10-20 NUMBER OF SEQ ID NOS: 19 NUMBER OF SEQ ID NOS: 19 NUMBER: FastSEQ for Windows Version 4.0
                                                                                                                           NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 361
TYPE: PRT
ORGANISM: Plasmodium
                                                             ORGANISM: Plasmodium
 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Η.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          H 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCSHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEAKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LNYTYEKSNYEVKIKELNYLKTIQDKLADFKKNNNFYGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                             falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             falciparum
 93.2%;
99.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93.2%; Score 1922; DB 15; 99.7%; Pred. No. 3.9e-149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
 1922;
No. 3.
 DB 15;
3.9e-149;
                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                  PROTEIN
```

```
Ş
                                         밁
                                                               QY
                                                                                              밁
                                                                                                                       Qy
                                                                                                                                                  밁
                                                                                                                                                                           Š
                                                                                                                                                                                                                                                               ; ORGANISM: preferabley, a bacterium, virus, or US-09-175-683-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 6
US-09-175-683-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 364; Conserv
                                                                                                                                                                                                                                                                                                                    SOFTWARE: FastSEQ for Windows Version SEQ ID NO 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 13, Application:
                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Chen, Li How
APPLICANT: Meade, Henry
TITLE OF INVENTION: NOVEL MODIFIED MSP-1 NUCLEIC ACID SEQUENCES AND METHODS
TITLE OF INVENTION: FOR INCREASING MRNA LEVELS AND PROTEIN EXPRESSIONS IN
TITLE OF INVENTION: CELL SYSTEMS
FILE REFERENCE: 10275/134001
CURRENT APPLICATION NUMBER: US/09/175,683A
CURRENT FILING DATE: 1998-10-20
EARLIER FILING DATE: 1998-08-07
EARLIER APPLICATION NUMBER: US 60/095,649
EARLIER APPLICATION NUMBER: US 60/052,592
EARLIER APPLICATION NUMBER: US 60/062,592
EARLIER FILING DATE: 1997-10-20
NUMBER OF SEC IN NOC. 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                           LENGTH: 37
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         384
                                         123
                                                                    131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        264 VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                144
               191
                                                                                           360;
                                                                                                                                                               12 VLVTATL-CTAGAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTENVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               376
                                                                                                                                                    3 VLIIACLVALAIAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTYNHKIDLFVIHLEAKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                        SIDTDINFANDYLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    - =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCSHHHHH
KIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                         SIDTDINFANDVLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/09175683A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                      93.0%;
                                                                                                                                                                                                          1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                         Score 1919.5; DB 1
Pred. No. 6.6e-149;
1; Mismatches 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                   DB 15;
                                                                                                                                                                                                                                                                            parasite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                       ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                        182
                                                                   190
                                                                                              122
                                                                                                                        130
                                                                                                                                                  62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                             70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
```

```
FILE REFERENCE: 10275-134001

CURRENT APPLICATION NUMBER: US/09/175,683B

CURRENT FILING DATE: 1998-10-20

PRIOR APPLICATION NUMBER: US 60/085,649

PRIOR FILING DATE: 1998-05-15

PRIOR APPLICATION NUMBER: US 60/062,592

PRIOR FILING DATE: 1997-10-20

NUMBER OF SEQ ID NOS: 19

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 11

LENGTH: 379

TYPE: PRT

ORDANISM: Artificial Sequence
밁
                            Ş,
                                                               밁
                                                                                          Š
                                                                                                                           밁
                                                                                                                                                         Q
                                                                                                                                                                                            밁
                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                       맑
                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; OTHER INFORMATION: ; OTHER INFORMATION: US-09-175-683B-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 7
US-09-175-683B-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 11, Application US/09175683B
GENERAL INFORMATION:
APPLICANT: Chen, Li How
APPLICANT: Meade, Harry M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: NOVEL MODIFIED NUCLEIC ACID TITLE OF INVENTION: AND METHODS FOR INCREASING TITLE OF INVENTION: EXPRESSION IN CELL SYSTEMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
363
                               371
                                                                                             311
                                                               303
                                                                                                                           243
                                                                                                                                                                                              183
                                                                                                                                                                                                                                                          123
                                                                                                                                                           251
                                                                                                                                                                                                                          191
                                                                                                                                                                                                                                                                                         131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           183
                                                                                                                                                                                                                                                                                                                                                                                                                                                   364;
                                                                                                                                                                                                                                                                                                                         63
                                                                                                                                                                                                                                                                                                                                                    71
                                                                                                                                                                                                                                                                                                                                                                                                                   12
                                                                                                                                                                                                                                                                                                                                                                                     w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                    VKDILNSRFNKRENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKD 130
                              LFDGIFCSHHHHHH 384
                                                                           EECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYP
                                                                                                                                             HNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDER 310
                                                                                                                                                                                                                                                      SIDTDINFANDVLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVND
                                                                                                                                                                                                                                                                                                                                                                                                                 VLVTATL-CTAGAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVN
LFDGIFCSHHHHHH
                                                                                                                           HNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLQISQHQCVKKQCPQNSGCFRHLDER
                                                                                                                                                                                          KIDLFVIHLEAKVLQYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYN
                                                                                                                                                                                                         KIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYN 250
                                                                                                                                                                                                                                                                                        SIDTDINFANDVLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNH 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LFDGIFCSHHHHHH 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYP 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HNALLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDER 310
                                                             EECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYP
                                                                                                                                                                                                                                                                                                                                                                                   VLIIACLVALAIAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LFDGIFCSHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLQISQHQCVKKQCPQNSGCFRHLDER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KIDLFVIHLEAKVLQYTYEKSNYEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            altered MSP sequence; preferably, virus, or parasite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93.0%;
376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   376
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1919.5; DB 19 Pred. No. 6.7e-149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCES
MRNA LEVELS AND PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a bacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  379;
                                                                                                                                                                                                                                                                                                                                                                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                           302
                                                                                                                                                                                          242
                                                                                                                                                                                                                                                        182
                                                                                                                                                                                                                                                                                                                                                                                   62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           242
```

```
PRIOR APPLICATION NUMBER: US 60/085,649
PRIOR FILING DATE: 1998-05-15
PRIOR APPLICATION NUMBER: US 60/062,592
PRIOR FILING DATE: 1997-10-20
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FASTSEQ FOR Windows Version 4.0
SEQ ID NO 11
LENGTH: 379
APPLICANT: St. Elizabeth's medical Center, Inc.
TITLE OF INVENTION: Band 3 Antigenic Peptides, Ma
FILE REFERENCE: S1237/7019W0
; CURRENT APPLICATION NUMBER: PCT/US02/06415
; CURRENT FILING DATE: 2002-03-01
PRIOR APPLICATION NUMBER: US 06/272,930
PRIOR FILING DATE: 2001-03-02
; NUMBER OF SEQ ID NOS: 59
SOFTWARE: Patentin version 3.0
; SEQ ID NO 11
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TYPE: PRT ; ORGANISM: Plasmodium US-09-175-684A-11
                                                                                                                                                                                                 RESULT 9
PCT-US02-06415-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-175-684A-11
                                                                                                                                                              Sequence 11, Application PC/TUS0206415 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 11, Application US/09175684A
GENERAL INFORMATION:
APPLICANT: Chen, Li How
APPLICANT: Meade, Harry M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: NOVEL MODIFIED MSP-1 NUCLEIC TITLE OF INVENTION: SEQUENCES AND METHODS FOR TITLE OF INVENTION: EXPRESSION IN CELL SYSTEMS FILE REFERENCE: 10275-133001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/175,684A CURRENT FILING DATE: 1998-10-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                371
                                                                                                                                                                                                                                                                                                                              303
                                                                                                                                                                                                                                                                                                                                                          311
                                                                                                                                                                                                                                                                                                                                                                                           243
                                                                                                                                                                                                                                                                                                                                                                                                                                                    363
                                                                                                                                                                                                                                                                                                                                                                                                        251 HNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     131 SIDTDINFANDVLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNH 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 364;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12 VLYTATI-CTAGAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVN 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                 LFDGIFCSHHHHHH 384
                                                                                                                                                                                                                                                                                                                                                EECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLQISQHQCVKKQCPQNSGCFRHLDER
                                                                                                                                                                                                                                                                                                                            EECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VLIIACLVALAIAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93.0%;
                                                                                                                                                                                                                                                                376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1919.5; DB 19 Pred. No. 6.7e-149; 1; Mismatches 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MSP-1 NUCLEIC ACID METHODS FOR INCREASING
                                                                                                                                             Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 15;
                                                                                                                                 Malaria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                              Polypeptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LEVELS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Đ
                                                                                                                                Uses
                                                                                                                                                                                                                                                                                                                            362
                                                                                                                                                                                                                                                                                                                                                                                                                    310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62
                                                                                                                                                                                                                                                                                                                                                                                        302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROTEIN
                                                                                                                              There
```

```
ρ
                                                                               밁
                                                                                                       8
                     밁
                                                                                                                                         В
                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 10
US-10-087-464-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                      US-10-087-464-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Plasmodium PCT-US02-06415-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 11, Application US/10087464 GENERAL INFORMATION:
                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn version 3.0 SEQ ID NO 11
                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/10/087,464
CURRENT FILING DATE: 2002-03-01
PRIOR APPLICATION NUMBER: US 06/272,930
PRIOR FILING DATE: 2001-03-02
NUMBER OF SEQ ID NOS: 59
                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Goel, Vikas
APPLICANT: L1, Xuerong
TITLE OF INVENTION: Band 3 Antigenic Peptides, Malaria Polypeptides
FILE REFERENCE: S1237/7019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Chishti, Athar
APPLICANT: Oh, Steven
APPLICANT: Liu, David
                                                                                                                                                                                                                                                                                   ORGANISM: Plasmodium
                                                                                                                                                                                                                                                                                                    TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE:
                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 142
                                                                                                                                                                                                        355;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         355;
                                                                               61
                                                                                                                                                                           22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22
                                                                                                                                                                                                                                                                                                                 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                 VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA 201
                                                                                            RENFKNYLESDLIPYKDLTSSNYVYKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND 141
                                                                                                                                                         GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK 81
                                                                             RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                         GEAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GMVFENLAKTVLSNILDGNLQGMLNISOHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KYLNYTYEKSNYEYKIKELNYLKTIQDKLADFKKNNNEYGIADLSTDYNHNNLLTKFLST 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GEAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Liu, David
Goel, Vikas
                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                 falciparum
                                                                                                                                                                                                                  91.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   91.1%;
99.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    falciparum
                                                                                                                                                                                                       Score 1879; D
Pred. No. 1.4e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 1879; DB 1;
Pred. No. 1.4e-145;
n: Mismatches 2;
                                                                                                                                                                                                     ; DB 24;
1.4e-145;
hes 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Uses
                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Thereof
                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                       RESULT 12
US-09-791-537-107657
                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; ORGANISM: Plasmodium US-09-791-537-54386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 11
US-09-791-537-54386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  맑
           Sequence 107657, Application US/09791537
GENERAL INFORMATION:
APPLICANT: Bionomix, Inc.
APPLICANT: Dobe, Derek
APPLICANT: Dobe, Derek
APPLICANT: Danzer, Joseph
TITLE OF INVENTION: THREE DIMENSIONAL STRUCTURES
TITLE OF INVENTION: METHODS OF USE THEREOF
FILE REFERENCE: 261/210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION NUMBER: US/09/791,537
CURRENT FILING DATE: 2001-02-22
NUMBER OF SEQ ID NOS: 153055
SOFTWARE: Patentin version 3.0
SEQ ID NO 54386
LENGTH: 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: BLONOMIX, Inc.
APPLICANT: Debe, Derek
APPLICANT: Danzer, Joseph
TITLE OF INVENTION: THREE DIMENSIONAL STRUCTURES
TITLE OF INVENTION: METHODS OF USE THEREOF
FILE REFERENCE: 261/210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 54386,
CURRENT APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                         143
                                                                                                                                                                                                     323
                                                                                                                                                                                                                                    322
                                                                                                                                                                                                                                                                 263
                                                                                                                                                                                                                                                                                              262
                                                                                                                                                                                                                                                                                                                                                           202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                             203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                              GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                                          KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                      VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                       VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTYNDKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                   RENFKNYLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                             KYLNYTYEKSNYEVKIKELNYLKTIQDKLADFKKNNNFYGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                              GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/09791537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           91.18;
us/09/791,537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 1879; DB 21;
Pred. No. 1.6e-145;
0; Mismatches 2;
                                             얶
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                             PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 400;
                                             FAMILIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FAMILIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   378
                                             AND
                                                                                                                                                                                                                                                                                            321
                                                                                                                                                                                                                                                                                                                           262
                                                                                                                                                                                                                                                                                                                                                        261
                                                                                                                                                                                                                                                                                                                                                                                     202
                                                                                                                                                                                                                                                                                                                                                                                                                   201
                                                                                                                                                                                                                                                                                                                                                                                                                                                 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
```

ĕ

```
RESULT 13
US-09-791-537-107661
Sequence 107661, Application US/09791537
Sequence 107661, Application US/09791537
GENERAL INFORMATION:
APPLICANT: Bionomix, Inc.
APPLICANT: Debe, Derek
APPLICANT: Debe, Derek
APPLICANT: Denzer, Joseph
TITLE OF INVENTION: THREE DIMENSIONAL STRUCTURES OF PROTEIN FAMILIES AND FAMILY MEMBI
TITLE OF INVENTION: METHODS OF USE THEREOF
FILE REFERENCE: 261/210
      밁
                       Š
                                                   밁
                                                                     δÃ
                                                                                                밁
                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                  ; ORGANISM: Plasmodium falciparum US-09-791-537-107661
                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TYPE: PRT; ORGANISM: Plasmod1um US-09-791-537-107657
                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/791,537
CURRENT FILING DATE: 2001-02-22
NUMBER OF SEQ ID NOS: 153055
SOFTWARE: Patentin version 3.0
SEQ ID NO 107661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT FILING DATE: 2001-02-22
NUMBER OF SEQ ID NOS: 153055
SOFTWARE: PatentIn version 3.0
SEQ ID NO 107657
LENGTH: 539
                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                   Matches
                                                                                                                                                                                                                          TYPE: PRT
                                                                                                                                                                                                                                      LENGTH: 539
                                                                                                                                                y Match 91.1%;
Local Similarity 99.4%;
hes 355; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Match 91.18;
Local Similarity 99.48;
      282
                            142
                                                                                                                                                                                                                                                                                                                                                                                                                                                         462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                162
                                                                                                   162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  222
                                                                           82
                                                                                               82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA
                                               EGDKCYENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GMVFENLAKTYLSNILLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       falciparum
                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                Score 1879; DB 21;
Pred. No. 2.4e-145;
0; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 1879; DB 21;
Pred. No. 2.4e-145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                     Length 539;
                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 539;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                Gaps
                                                                       141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 341
                         201
                                                                                                  221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       201
                                                                                             RESULT 15
US-09-791-537-108146
                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                  Š
Sequence 108146, Application US/09791537
(GENERAL INFORMATION:
APPLICANT: Bionomix, Inc.
APPLICANT: Debe, Derek
APPLICANT: Debe, Derek
APPLICANT: Debe, Derek
TITLE OF INVENTION: THREE DIMENSIONAL STRUCTURES
TITLE OF INVENTION: METHODS OF USE THEREOF
FILE REFERENCE: 261/210
                                                                                                                                                                     Ş
                                                                                                                                                                                               멁
                                                                                                                                                                                                               · Q
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-791-537-108117; Sequence 108117, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Bionomix, Inc.
                                                                                                                                                                       322
                                                                                                                                                                                                402
                                                                                                                                                                                                                       262
                                                                                                                                                                                                                                              342
                                                                                                                                                                                                                                                                      202
                                                                                                                                                                                                                                                                                              282
                                                                                                                                                                                                                                                                                                                      142
                                                                                                                                                                                                                                                                                                                                             222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         342
                                                                                                                                                 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                202
                                                                                                                                                                                                                                                                                                                                                                                                                                          al Similarity
355; Conserv
                                                                                                                                                                                                                                                                                                                                                                   82.
```

```
APPLICANT: Debe, Derek
APPLICANTON: THREE DIMENSIONAL STRUCTURES OF PROTEIN FAMILIES AND FAMILY ME
TITLE OF INVENTION: METHODS OF USE THEREOF
FILE REFERENCE: 261/210
CURRENT APPLICATION NUMBER: US/09/791,537
CURRENT FILING DATE: 2001-02-22
NUMBER OF SEQ ID NOS: 153055
SOFTWARE: Patentin version 3.0
SEQ ID NO 108117
LENGTH: 539
TYPE: PRT
ORGANISM: Plasmodium falciparum
US-09-791-537-108117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EGDKCYENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
                                                                                                                         GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ 321
                                                                                                                                                                                                                            KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KYLNYTYEKSNYEYKIKELNYLKTIQDKLADFKKNNNEYGIADLSTDYNHNNLLTKELST 261
                                                                                                                                                                                                                                                                                                                              VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                         RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                             GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                  KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST 401
                                                                                                                                                                                                                                                                                                 VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                 RENTKNYLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Application
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91.1%; Score 1879; DB 21; 99.4%; Pred. No. 2.4e-145; tive 0; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     us/09791537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         518
                                                                                                                                                                                                                                                                                                                                                                                            281
                                                                                                                                                                                                                                                                                                                                                                                                                                                141
                                                                                                                                                                                                                                                                                                 341
                                                                                                                                                                                                                                                                                                                                                201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 221
```

ဝူ

PROTEIN FAMILIES AND FAMILY

ă

: 4: - .>

```
CURRENT APPLICATION NUMBER: US/09/791,537
CURRENT FILING DATE: 2001-02-22
NUMBER OF SEQ ID NOS: 153055
SOFTWARE: Patentin version 3.0
SEQ ID NO 108146
LENGTH: 539
TYPE: PRT
ORGARISM: Plasmodium falciparum
US-09-791-537-108146
                                               밁
                                                                   Ş
                                                                                            밁
                                                                                                                 Š
                                                                                                                                            밁
Search completed: June 11, 2003, 16:09:14 Job time: 150 secs
                                                                                                                                                                 Š
                                                                                                                                                                                          밁
                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                   Query Match 91.1%; Score 1879; DB 21; Best Local Similarity 99.4%; Pred. No. 2.4e-145; Matches 355; Conservative 0; Mismatches 2;
                                           202 KYLNYTYEKSNYEVKIKELNYLKTIQDKLADFKKNNNEVGIADLSTDYNHNNLLTKELST 261
                                                                                                                                                                                      402 GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ 461
                                                                                                       262 GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ 321
                                                                                                                                                                                                                                      Length 539;
                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                      221
                                                                                                                                                                                                                                                                                                                                     0;
```

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM protein -
                                       11
12
13
14
15
16
17
17
18
19
20
20
21
23
23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                141.5
141.5
141.5
141.5
141.5
141.5
                                                                                                                                               149
149
149
144.5
144.5
144.5
144.5
144.5
144.5
144.5
144.5
144.5
142.5
142.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Match
                             Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pending_Patents_AA_New:*

1: /cgn2_6/ptodata/1/paa/PcT_NEW_COMB.pep:*

2: /cgn2_6/ptodata/1/paa/US06_NEW_COMB.pep:*

3: /cgn2_6/ptodata/1/paa/US07_NEW_COMB.pep:*

4: /cgn2_6/ptodata/1/paa/US09_NEW_COMB.pep:*

5: /cgn2_6/ptodata/1/paa/US09_NEW_COMB.pep:*

6: /cgn2_6/ptodata/1/paa/US09_NEW_COMB.pep:*

7: /cgn2_6/ptodata/1/paa/US06_NEW_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1050967 seqs, 226864292 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    June 11, 2003, 16:04:40 ; Search time 99 Seconds
(without alignments)
879.958 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MWSWKCLLFWAVLVTATLCT.....KPDSYPLFDGIFCSHHHHHH 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-500-376-8
2063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore versión 5.1.6
Copyright (c) 1993 - 2003 Compuç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length DB
                   7 US-60-466-412-12270
    US-60-453-135-12271
    US-60-453-050-12271
    US-60-455-241-6420
    US-60-455-241-6420
    US-60-455-12273
    US-60-455-12273
    US-60-455-12273
    US-60-455-241-6422
    US-60-455-441-6422
    US-60-455-441-6422
    US-60-455-241-6422
    US-60-455-241-6422
    US-60-455-241-6422
    US-10-335-977-7264
    US-10-335-977-7265
    US-10-335-977-7265
    US-10-335-977-7265
    US-60-453-135-12267
    US-60-453-135-12267
    US-60-453-135-12267
    US-60-455-241-6416
    US-60-455-241-6416
    US-60-455-412-12267
    US-60-455-412-12267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1050967
                                                                            Sequence
Sequence
                                                                                                                         Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                Sequence
                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                               Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 6, Appli
Sequence 12270, A
112270, A

112270, A

16419, Ap

162271, A

112271, A

112271, A

112271, A

112271, A

112273, A
```

	45	44	. 14			4.3	4(·		ň	(L)		٠.	ي	ω	٠	. د	ب	ω	Ų.	, ,		27
																				_		o a	۰ ٦
	41.5	41.5	141.5	4		41 5	.41.5	41.5	14.0		141.5	141.5	1.0						141.5	141.5	141.5	141.5	141.5
;	6.9	6.9	6.9	6.9		ם מ	6.9	6.9	. 9		9	6.9	6.9	,	9	6.9	6.9		ם	6.9	6.9	6.9	6.9
	702	702	702	702	102	3 (609	609	609		609	609	609		600	609	609	200		432	432	432	432
ţ	л	ß	σ	G	G	1 (יכ	U	Ŋ	·	л	տ	u	L	n i	U	ۍ	,	3 .	7	7	7	7
7878-0/0-47/	TIG-00-734 67	-09-734	-724	US-09-724-67	US-09-724-676	767-100 TO		9	US-09-949-016	9T0-656-60-00	20	9	US-09-949-016-775	0-14-949-0		-09-040	US-09-949-0	US-60-466-4	100	1 2 6 7 6	US-60-455-4	US-60-453-050	US-60-453-135
0/878-0	60070-0	0.0000	20000	1-676-82867	6-82866	2-384	200	6-7754	6-7753	Lb-//52	1701	6-7751	16-7750	-016-7749	O±0-//40	10 / 10	-016-7747	-412-12268	/T#0-T#	11 041	444-6417	1	35-12268
Sequence	Sequence	sequence	eduence	Schrence	Secure Se	Sequence	Sequence	sequence	Santance	Secure	Sequence	eduence	Contraction	Sections	Sequence	sequence	Sednence	company of	Sequence	sequence	Software	andrence	Secure
82870. A	82869, A	82868, A	82867, A	02000, A	2000	384	7754, Ap	//53, Ap			7751, Ap				7748. AD	7/47, Ap	T2268,	1	6417	6417, Ap			

ALIGNMENTS

```
οy
                                                                                    맑
                                                                                                                                                 В
                                                                                                                                                                         ρy
                                                                                                                                                                                                               Дb
                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 6
LENGTH: 2184
TYPE: PRT
ORGANISM: Plasmodium falciparum
FEATURE:
NAME/KEY: unsure
LOCATION: (330)...(335)
                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                       US-10-304-095-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 1
US-10-304-095-6
                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 6, Application US/10304095
GENERAL INFORMATION:
APPLICANT: Long, David M.
APPLICANT: Metz, Anneke M.
APPLICANT: Love, Ruschelle A.
TITLE OF INVENTION: Telomerase Reverse Transcriptase (TERT) Genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: US/10/304,095
PRIOR ETLING DATE: 2002-11-26
PRIOR ETLING DATE: 2002-06-14
NUMBER OF SEQ ID NOS: 49
SOFTWARE: Patentry "-
EO Try "-
                                                                                                                                                                                                                                                                                                                                                                                                                  OTHER INFORMATION:
OTHER INFORMATION:
1469 IYNNSFDSTTTTHSSNNYKGNNIHVSGDYKNDGLLHKGNNSMNBCYVKDIKCNNNNNNNN
                                                                                  1416
                                                                                                                          1358 TVIRYYYLNIYFSIKEFKLNRKNIFYFQIFQENQMKGVY--LSVRDKKRVENIKKWYLNS 1415
                                                                                                                                                                                                           1308
                                                                                                                                                                                                                                                      1255 ILKNEFDNI-----NNFEFTYL--FKRSFRLYNKNLNNSELSYYPVNVKSFGLHYIRNLR 1307
                                    226 IQ----DKLADFKKNNNFVG-IADLSTDY------
                                                                                                                                                 124 ---SYNYI------KDSIDTDINFANDVLGYYKILSEKYKSDLDSIKK-YIND 166
                                                                                                                                                                                                                       74 --ILNSRENKREN-----FKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLS-- 123
                                                                                                                                                                                                                                                                                       25 VTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMT-FNVNVKD------
                                                                                                                                                                                                                                                                                                                                                n 7.48;
Similarity 22.28;
                                                              MKKINHDEILESIKNSSI---NINNKNFMICTNHEQD----TEEKGNTQNKEKHDIYIGP
                                                                                             -KQGENEKYLPELNNIETLYKTYNHKIDLFVIHLEAKVLNYTYEKSNYEVKIKELNYLKT 225
                                                                                                                                                                                        ELIIKSHLNDNHHFLLNOMFKTKSKSDL------YIFADSYKSLQVDKRDIFMTYI 1357
                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                              Xaa at position 330 = Xaa at position 335 =
                                                                                                                                                                                                                                                                                                                                  54;
                                                                                                                                                                                                                                                                                                                          Score 152.5; DB 6;
Pred. No. 3.1e-05;
54; Mismatches 133;
                                                                                                                                                                                                                                                                                                                                                                                                             Leu
Asp
                                                                                                                                                                                                                                                                                                                                                       DB_6; Length 2184;
                                                                                                                                                                                                                                                                                                                                                                                                           유유
                                                                                                                                                                                                                                                                                                                          Indels 139;
                                                                                                                                                                                                                                                                                                                        Gaps
                                                               1468
                                                                                                                                                                                                                                                                                         73
```

Thu

```
γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 2
US-60-453-135-12270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; ORGANISM: Homo sapiens US-60-453-135-12270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION NUMBER: US/60/453,135
CUBRENT FILING DATE: 2003-03-10
NUMBER OF SEQ ID NOS: 82762
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 12270
LENGTH: 688
                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 12270, Application US/60453135 GENERAL INFORMATION:
                                                                                                                                                                         RESULT 3
US-60-453-050-12270
Sequence 12270, Application US/60453050; Sequence 12270.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH TITLE OF INVENTION: MYCCARDIAL INFARCTION, METHODS OF DEPILE REFERENCE: CL001456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: CARGILL, Michele APPLICANT: IAKOUBOVA, Olga
SEQ ID NO
                         TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH TITLE OF INVENTION: STENOSIS, METHODS OF DETECTION AND USES FILE REFERENCE: CL001457 CURRENT APPLICATION NUMBER: US/60/453,050 CURRENT FILING DATE: 2003-03-10 NUMBER OF SEQ ID NOS: 82762 SOFTWARE: PRASISEQ FOR WINDOWS VETSION 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
                                                                                                                                            APPLICANT: CARGILL, MAPPLICANT: LUKE, May
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                250 -- NHNNLLTKFLSTGMVFENLAKTVLS----
                                                                                                                                                                                                                                                                                                                                                                                                                                       139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   113 YFSVNVSAVAPY-WTSPEKMEKKLHAVPAAKTVKFKCPSSGTPNPTLRWLKNGKE----F 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     103
                                                                                                                                                                                                                                                                                                                                                                                                        168
                                                                                                                                                                                                                                                                             279
                                                                                                                                                                                                                                                                                                                                          219
                                                                                                                                                                                                                                                                                                                                                                         198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NNNNNNINNSYNKLNCYTNNSKNDIIKYHKTIDTDNSKNHTYFKNKFLNFLDKKIISNIY 1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GM---LNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENN 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
 12270
688
                                                                                                                                                                                                                                                                                                                                                                       H------LEAKY-LNYTYE-KSNYEVKIK------ELNYLKTIQDKLADFKKNN-NFV 240
                                                                                                                                                                                                                                                                                                                                                                                                                                    AND-VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVI 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LRDDVQSINWLRDGVQLAESNRTRITGEE----VEVQDSVPADSGLYACVTSSPSGSDTT 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENNYMTEN-----VNVKDILNSRENKRENEKNVLESDLIP-----YKDLTSS-----
                                                                                                                                                                                                                                                                                                                                                                                                      KPDHRIGGYKVRYATWSIIMDSV---VPSDKGN----YTCIVENEYGSINHTYQLDVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----NYVVKDPYKFLNKEKRDKFL-----
                                                                                                                                                                                                                                                                          QILKVSADSSASMNSGVLLVR 299
                                                                                                                                                                                                                                                                                                         GI----ADLSTDYNHNNLLTK 257
                                                                                                                                                                                                                                                                                                                                      ERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDPQPHIQWLKHIEVNGSKIGPDNLPYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                               Michele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --SLYYAYLDKNEEFQNLLYSEKQINNKYFLANGTCNYFN 1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 149; DB 7; Length 68
pred. No. 1.3e-05;
15; Mismatches 107; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----SSYNYIKDSIDTDINF 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DETECTION AND USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NLLD----GNLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             86;
                                                                                                                       THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 56
                                                                                                                                                                                                                                                                                                                                                                                                                    218
                                                                                                                                                                                                                                                                                                                                                        278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       THEREOF
```

```
; TYPE: PRT
; ORGANISM: Homo s
US-60-453-050-12270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-60-455-444-6419
                                                                                                                                                                                                                                                                                                                       ; ORGANISM: Homo sapiens US-60-455-444-6419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                             8
                                                                                                                                          밁
                                                                                                                                                                        δÃ
                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                  Š
                                                     80
                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/60/455,444
CURRENT FILING DATE: 2003-03-18
NUMBER OF SEQ ID NOS: 50986
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 6419
LENGTH: 688
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 6419, Application US/60455444 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: CARGILL, Michele
APPLICANT: BEGOVICH, Ann
TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TITLE OF INVENTION: RHEUMATOID ARTHRITIS, METHODS OF DETECTION
TILE REFERENCE: CL001455
                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  168 KPDHRIGGYKVRYATWSIIMDSV----VPSDKGN-----YTCIVENEYGSINHTYQLDVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            139 AND-VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          113 YFSVNVSAVAPY-WTSPEKMEKKLHAVPAAKTVKFKCPSSGTPNPTLRWLKNGKE----F 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      103 ----NYVVKDPYKFLNKEKRDKFL------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 GI----ADLSTDYNHNNLLTK 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57 LRDDVQSINWLRDGVQLAESNRTRITGEE----VEVQDSVPADSGLYACVTSSPSGSDTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83;
                                                                                                                 103 ----NYVVKDPYKFLNKEKRDKFL-----
                                                                                                                                                                                                                                                                 al Similarity
83; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                           139
                                                                                                                                                 57
                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENNVMTFN-----VNVKDILNSRFNKRENFKNVLESDLIP-----YKDLTSS-----
                                                                                                                                                                                                                                     1 MWSWKCLLEWAVLYTATLCTAGAAVT-PSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQ 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QILKVSADSSASMNSGVLLVR 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDPQPHIQWLKHIEVNGSKIGPDNLPYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      H-----EENYLKTIQDKLADFKKNN-NFV
                                                                                                                                                                           LENNVATEN-----VNVKDILNSRFNKRENFKNVLESDLIP-----YKDLTSS------ 102
                                                                                                                                                                                                          LRDDVQSINWLRDGVQLAESNRTRITGEE----VEVQDSVPADSGLYACVTSSPSGSDTT 112
                             KPDHRIGGYKVRYATWSIIMDSV----VPSDKGN----YTCIVENEYGSINHTYQLDVV
                                                        AND-VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVI 197
                                                                                     YFSVNVSAVAPY-WTSPEKMEKKLHAVPAAKTVKFKCPSSGTPNPTLRWLKNGKE----F 167
H-----LEAKV-LNYTYE-KSNVEVKIK----:-ELNYLKTIQDKLADFKKNN-NEV 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7.28;
                                                                                                                                                                                                                                                                                  25.98;
                                                                                                                                                                                                                                                                                  7.2%; Score 149; DB 7;
25.9%; Pred. No. 1.3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 149; DB 7;
pred. No. 1.3e-05;
                                                                                                                                                                                                                                                                       45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             107;
                                                                                                                                                                                                                                                                            107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 688;
                                                                                                                                                                                                                                                                                                     Length 688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -SSYNYIKDSIDTDINF 138
                                                                                                                           -SSYNYIKDSIDTDINF 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               86;
                                                                                                                                                                                                                                                                             86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18;
                                          218
```

86;

Gaps

278

```
RESULT 6
US-60-466-412-12270
Sequence 12270, Application US/60466412
                                                                                TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TITLE OF INVENTION: MYOCARDIAL INFARCTION, METHODS OF DETECTION AND USES
FILE REFERENCE: CL001466
CURRENT APPLICATION NUMBER: US/60/466,412
CURRENT FILING DATE: 2003-04-30
NUMBER OF SEQ ID NOS: 429241
SOFTWARE: FastSEQ for Windows Version 4.0
LENGTH . 660
                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; TYPE: PRT
; ORGANISM: Homo sapiens
US-60-465-241-6419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-60-465-241-6419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION NUMBER: US/60/465,241
CURRENT FILING DATE: 2003-04-23
NUMBER OF SEQ ID NOS: 254418
SOFTWARE: FRSTSEQ for Windows Version 4.0
SEQ ID NO 6419
                                ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 6419, Application US/60465241 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH TITLE OF INVENTION: RHEUMATOID ARTHRITIS, METHODS OF DETECTION AND USES THEREOF FILE REFERENCE: CL001468
                                                                          ENGTH: 688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: CARGILL, Michele APPLICANT: BEGOVICH, Ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 688
                                                                                                                                                                                                                                                                                                                                                                           279 QILKVSADSSASMNSGVLLVR 299
                                                                                                                                                                                                                                                                                                                                                                                                             241 GI----ADLSTDYNHNNLLTK 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             168 KPDHRIGGYKVRYATWSIIMDSV----VPSDKGN-----YTCIVENEYGSINHTYQLDVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 113 YFSVNVSAVAPY-WTSPEKNEKKLHAVPAAKTVKFKCPSSGTPNPTLRWLKNGKE----F 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   103 ----NYVVKDPYKFLNKEKRDKFL-----138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60 LENNYMTEN-----VNVKDILNSRENKRENEKNVLESDLIP----YKDLTSS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               279 QILKVSADSSASMNSGVLLVR 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241 GI----ADLSTDYNHNNLLTK 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MWSWKCLLFWAVLVTATLCTAGAAVT-PSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       H------LEAKV-LNYTYE-KSNVEVKIK-----ELNYLKTIODKLADFKKNN-NEV 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                      ERSPHRPILQAGLPANKTVALGSNVEFNCKVYSDPQPHIQWLKHIEVNGSKIGPDNLPYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND-VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVI 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LRDDVQSINWLRDGVQLAESNRTRITGEE----VEVQDSVPADSGLYACVTSSPSGSDTT 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MWSWKCLLFWAYLVTATLCTARPSPTLPEQAQPWGAPVEVESFLVH----PGDLLQLRCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDPQPHIQMLKHIEVNGSKIGPDNLPYV 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45; Mismatches 107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 149; DB 7;
Pred. No. 1.3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 688;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                        278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               56
                                          δÃ
                                                                                      밁
                                                                                                                       Ş
                                                                                                                                                           밁
                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                                                                                                      ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                            ; ORGANISM: Homo sapiens
US-60-453-135-12271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 7
US-60-453-135-12271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/60/453,135
CURRENT FILING DATE: 2003-03-10
NUMBER OF SEQ ID NOS: 82762
SOFTWARE: FBSTSEQ for Windows Version 4.0
SEQ ID NO 12271
LENGTH: 460
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-60-466-412-12270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 12271, Appli GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: IAKOUBOVA, Olga
TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TITLE OF INVENTION: MYOCARDIAL INFARCTION, METHODS OF DE-
FILE REFERENCE: CL001456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: CARGILL, Michele APPLICANT: IAKOUBOVA, Olga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
219 ERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDPQPHIQWLKHIE
                                198 H------LEAKV-LNYTYE-KSNVEVKIK------ELNYLKTIQ 227
                                                                                                  139 AND-VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVI 197
                                                                                                                                      113 YFSVNVSAVADY-WTSDEKMEKKLHAVPAAKTVKFKCDSSGTDNPTLRWLKNGKE----F 167
                                                                                                                                                                                  103 ----NYVVKDPYKFLNKEKRDKFL-----
                                                                                                                                                                                                           57 IRDDVQSINWIRDGVQLAESNRTRITGEE----VEVQDSVPADSGLYACVTSSPSGSDTT 112
                                                                                                                                                                                                                                                60 LENNYMTEN-----VNYKDILNSRENKRENFKNYLESDLIP-----YKDLTSS------ 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      279 QILKVSADSSASMNSGVLLVR 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  219 ERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDPQPHIQWLKHIEVNGSKIGPDNLPYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    198 H------LEAKV-LNYTYE-KSNVEVKIK------ELNYLKTIQDKLADFKKNN-NFV 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              113 YFSVNVSAVAÞY-WTSPEKNEKKLHAVÞAAKTVKFKCÞSSGTÞNÞTLRWLKNGKE----F 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  103
                                                                                                                                                                                                                                                                                                         1 MWSWKCLLFWAVLVTATLCTAGAAVT-PSVIDNILSKIENEVEVLYLKPLAGVYRSLKKQ 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60 LENNWMTEN-----VNWKDILNSRENKRENFKNVLESDLIP-----YKDLTSS------ 102
                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 83;
                                                                   KPDHRIGGYKYRYATWSIIMDSV----VPSDKGN-----YTCIVENEYGSINHTYQLDVV
                                                                                                                                                                                                                                                                                  MWSWKCLLFWAVLVTATLCTARPSPTLPEQAQPWGAPVEVESFLVH----PGDLLQLRCR 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MWSWKCLLFWAVLVTATLCTAGAAVT-PSVIDNILSKIENEVEVLYLKPLAGVYRSLKKQ 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GI----ADLSTDYNHNNLLTK 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KPDHRIGGYKVRYATWSIIMDSV----VPSDKGN-----YTCIVENEYGSINHTYQLDVV 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AND-VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVI 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----NYVVKDPYKFLNKEKRDKFL-----138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LRDDVQSINWLRDGVQLAESNRTRITGEE----VEVQDSVPADSGLYACVTSSPSGSDTT 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MWSWKCLLFWAVLVTATLCTARPSPTLPEQAQPWGAPVEVESFLVH----PGDLLQLRCR 56
                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1.2%; Score 149; DB 7; Length 688
1.1arity 25.9%; Pred. No. 1.3e-05;
Conservative 45; Mismatches 107; Todals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Application US/60453135
                                                                                                                                                                                                                                                                                                                                                             7.0%; Score 144.5; DB 7;
25.9%; Pred. No. 2e-05;
41. Mismatches 90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches 107;
                                                                                                                                                                           138 THIDISTORY 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            METHODS OF DETECTION AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                Length 460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
```

81;

Gaps

```
; ORGANISM: Homo sapiens US-60-453-050-12271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: CARGILL, Michele
APPLICANT: LUKE, May
                                                                                                                             ; ORGANISM: Homo sapiens
US-60-455-444-6420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 82762
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 12271
LENGTH: 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 12271, Application US/60453050
Дb
                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                         Sequence 6420, Application US/60455444
GENERAL INFORMATION:
APPLICANT: CARGILL, Michele
APPLICANT: BEGOVICH, Ann
TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TITLE OF INVENTION: RHEUMATOID ARTHRITIS, METHODS OF DETE
FILE REFERENCE: CL001455
                                                              Query Match
Best Local S
Matches 74
                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/60/455,444
CURRENT FILING DATE: 2003-03-18
NUMBER OF SEQ ID NOS: 50986
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 6420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT FILING DATE: 2003-03-10
                                                                                                                                                                                                                                                                                                                                                                                           60-455-444-6420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH ITLE OF INVENTION: STENOSIS, METHODS OF DETECTION AND USES THEREOFILE REFERENCE: CL001457
                                                                                                                                                                TYPE: PRT
                                                                                                                                                                                 LENGTH:
                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    103 ----NYVVKDPYKFLNKEKRDKFL------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57 LRDDVQSINWLRDGVQLAESNRTRITGEE----VEVQDSVPADSGLXACVTSSPSGSDTT 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60 LENNYMTEN-----VNVKDILNSRENKRENEKNVLESDLIP-----YKDLTSS------ 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MWSWKCLLFWAVLVTATLCTAGAAVT-PSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQ 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               74; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                 460
MWSWKCLLFWAVLVTATLCTARPSPTLPEQAQPWGAPVEVESFLVH----PGDLLQLRCR 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDPQPHIQWLKHIE 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AND-VIGYYKILSEKYKSDIDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVI 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YFSVNVSAVAPY-WTSPEKMEKKLHAVPAAKTVKFKCPSSGTPNPTLRWLKNGKE----F 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      H-----LEAKV-LNYTYE-KSNVEVKIK-----ELNYLKTIQ 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KPDHRIGGYKVRYATWSIIMDSV----VPSDKGN-----YTCIVENEYGSINHTYQLDVV 218
                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7.0%; Score 144.5; DB 7; 25.9%; Pred. No. 2e-05; ative 41; Mismatches 90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2003-03-10
82762
                                                                                  7.0%;
                                                                   Score 144.5; DB Pred. No. 2e-05; 1; Mismatches
                                                                                                    DB 7;
                                                                      90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----SSYNYIKDSIDTDINF 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 460;
                                                                                                    Length
                                                                          Indels
                                                                                                                                                                                                                                                                                                      DETECTION AND USES THEREOF
                                                                                                         460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81;
                                                                          81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                           Gaps
```

RESULT 11 US-60-466-412-12271

Sequence 12271, Application US/60466412

Sequence 12271, Application US/60466412

GENERAL INFORMATION:
APPLICANT: CARGILL, Michele
APPLICANT: IAKOUBOVA, Olya
TITLE OF INVENTION: GENERAL INFARCTION, METHODS OF DETECTION AND USES THEREOF
FILLE REFERENCE: CL001466
FILL REFERENCE: CL001466
CURRENT APPLICATION NUMBER: US/60/466,412
CURRENT FILING DATE: 2003-04-30
NUMBER OF SEQ ID NOS: 429241

P.III.D.	D	Qy	Qy Db	ob dg	Qу	Qу	Query M Best Lo Matches	; LEN; ; TYP; ; ORG.	CURRENT CURRENT NUMBER SOFTWARK		RESULT 10 US-60-465- ; Sequence ; GENERAL	Db	Qy	당	Qy	Db	Qy	Db	Qy
	219 ERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDPQPHIQWLKHIE 264		139 AND-VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLANLETLIKTYNHALDGEVET 1971 1 1 1 1 1 1 1 1 1	103NYVVKDPYKFLNKEKRDKFL	PYKDLTSS PADSGLYACYTSSPSGSDTT	1 MWSWRCLLFWAVLVTATLCTAGAAVT-PSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQ 39	atch 7.0%; Score 144.5; DB 7; Length 460; cal Similarity 25.9%; Pred. No. 2e-05; Todels 81; Gaps 74; Conservative 41; Mismatches 90; Indels 81; Gaps			CANT: CARGILL, E CANT: BEGOVICH, E OF INVENTION: TO TIVENTION:	241-6420 6420, Applic INFORMATION:	219 ERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDPQPHIQWLKHIE 264		168 KPDHRIGGYKVRYATWSIIMDSVVPSDKGNYTCIVENEYGSINHTYQLUVV 216			_ INF	57 LRDDVQSIWLLRDGVQLAESNRTRITGEEVEVQDSVPADSGLYACVTSSPSGSDTT 112	

```
; ORGANISM: Homo sapiens 
US-60-453-135-12273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 12
US-60-453-135-12273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            몆
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-60-466-412-12271
                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 12273, Application US/60453135 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: FastSEQ for Windows Version SEQ ID NO 12271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: IAKOUBOVA, Olga
TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TITLE OF INVENTION: MYCARDIAL INFARCTION, METHODS OF DETECTION AND USES THEREOF
FILE REFERENCE: CL001456
CURRENT APPLICATION NUMBER: US/60/453,135
CURRENT FILING DATE: 2003-03-10
NUMBER OF SEQ ID NOS: 82762
NUMBER OF SEQ ID NOS: 82762
SOFTWARE: FASTSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 802
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: CARGILL, Michele APPLICANT: IAKOUBOVA, Olga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                      113 YFSVNVSAVAPY-WTSPEKMEKKLHAVPAAKTVKFKCPSSGTPNPTLRWLKNGKE----F
   198 H------LEAKV-LNYTYE-KSNVEVKIK------ELNYLKTIQ 227
                                                   168 KPDHRIGGYKVRYATWSIIMDSV----VPSDKGN-----YTCIVENEYGSINHTYQLDVV 218
                                                                                                                                                           103 ----NYVVKDPYKFLNKEKRDKFL----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          219 ERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDPQPHIQWLKHIE 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         113
                                                                                                                                                                                                   57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      103 ----NYVVKDPYKFLNKEKRDKFL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60 LENNYMTFN-----VNVKDILNSRFNKRENFKNYLESDLIP-----YKDLTSS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MWSWKCLLFWAYLYTATLCTAGAAVT-PSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQ
                                                                                                                                                                                                                                                                                                                                                       n 7.0%;
Similarity 25.9%;
                                                                                    AND-VLGYYKILSEKYKSDLDSIKKYINDRQGENEKYLPFLNNIETLYKTVNHKIDLFVI 197
                                                                                                                                                                                          LRDDVQSINWLRDGVQLAESNRTRITGEE----VEVQDSVPADSGLYACVTSSPSGSDTT 112
                                                                                                                                                                                                                     LENNVMTFN-----VNVKDILNSRFNKRENFKNVLESDLIP----YKDLTSS-----
                                                                                                                                                                                                                                                                                              MWSWKCLLFWAVLVTATLCTAGAAVT-PSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQ 59
                                                                                                                                                                                                                                                            MWSWKCLLFWAVLVTATLCTARPSPTLPEQAQPWGAPVEVESFLVH----PGDLLQLRCR 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KPDHRIGGYKVRYATWSIIMDSV----VPSDKGN-----YTCIVENEYGSINHTYQLDVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AND-VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVI 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YFSVNVSAVAPY-WTSPEKMEKKLHAVPAAKTVKFKCPSSGTPNPTLRWLKNGKE----F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MWSWKCLLFWAVLVTATLCTARPSPTLPEQAQPWGAPVEVESFLVH----PGDLLQLRCR 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LRDDVQSINWLRDGVQLAESNRTRITGEE----VEVQDSVPADSGLYACVTSSPSGSDTT 112
                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -LEAKV-LNYTYE-KSNVEVKIK-----ELNYLKTIQ 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7.0%;
                                                                                                                                                                                                                                                                                                                                       41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                41;
                                                                                                                                                                                                                                                                                                                               Score 144.5; DB /;
Pred. No. 4.4e-05;
"" omatches 90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 144.5;
Pred. No. 2e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ------SSYNYIKDSIDTDINF 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              90;
                                                                                                                                                                                                                                                                                                                                                                    Length 802;
                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                       -SSYNYIKDSIDTDINF 138
                                                                                                                                                                                                                                                                                                                                   81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81;
                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                        167
                                                                                                                                                                                                                             102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        102
밁
                               ş
                                                                                                                               ; ORGANISM: Homo sapiens
US-60-455-444-6422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                   US-60-455-444-6422
                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-60-453-050-12273
                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/60/455,444
CURRENT FILING DATE: 2003-03-18
NUMBER OF SEQ ID NOS: 50986
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 6422
LENGTH: 802
                                                                   Matches
                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                            Sequence 6422, Application US/50455444
GENERAL INFORMATION:
APPLICANT: CARGILL, Michele
APPLICANT: BEGOVICH, Ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH TITLE OF INVENTION: RHEUMATOID ARTHRITIS, METHODS OF DETFILE REFERENCE: CL001455
                                                                                                                                                                         TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     57
```

```
; ORGANISM: Homo sapiens US-60-453-050-12273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/60/453,050
CURRENT FILING DATE: 2003-03-10
NUMBER OF SEQ ID NOS: 82762
SOFTWARE: FRASTSEQ for Windows Version 4.0
SEQ ID NO 12273
LENGTH: 802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 12273, Application US/60453050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH TITLE OF INVENTION: STENOSIS, METHODS OF DETECTION AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: CARGILL, APPLICANT: LUKE, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILE REFERENCE: CL001457
                                                                                                                                                                                                                                                   103 ----NYVVKDPYKFLNKEKRDKFL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   219 ERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDPQPHIQWLKHIE 264
                                                                                                                                                                                                                                                                                                                                           60 LENNVMTFN-----VNVKDILNSRFNKRENFKNVLESDLIP-----YKDLTSS----- 102
                                                                                                                                                                                                                                                                                                                                                                                            1 MWSWKCLLFWAVLVTATLCTARPSPTLPEQAQPWGAPVEVESELVH----PGDLLQLRCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                             KPDHRIGGYKVRYATWSIIMDSV----VPSDKGN-----YTCIVENEYGSINHTYQLDVV 218
                                                                                                                                           AND-VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVI 197
                                                                                                                                                                                             YFSVNVSAVAPY-WTSPEKMEKKLHAVPAAKTVKFKCPSSGTPNPTLRWLKNGKE----F
                                                                                                                                                                                                                                                                                                                                                                                                                                        MWSWKCLLFWAVLYTATLCTAGAAVT-PSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQ
                                                 H------ELNYLKTIQ 227
                                                                                                                                                                                                                                                                                               LRDDVQSINWLRDGVQLAESNRTRITGEE----VEVQDSVPADSGLYACVTSSPSGSDTT
ERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDPQPHIQWLKHIE 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LUKE, May
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Michele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; Score 144.5; DB 7;
; Pred. No. 4.4e-05;
41; Mismatches 90;
                                                                                                                                                                                                                                                -----SSYNYIKDSIDTDINF 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                               167
                                                                                                                                                                                                                                                                                                                                                                                               56
                                                                                                                                                                                                                                                                                                                                                                                                                                              59
```

```
1 MWSWKCLLFWAVLVTATLCTAGAAVT-PSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQ 59
                                                 Similarity
Conservative
                                                 7.0%;
                                     Score 144.5; DB /;
Pred. No. 4.4e-05;
                                       Indels
                                                        Length
                                       81;
                                     Gaps
                                      16;
```

METHODS OF DETECTION AND USES THEREOF

Ş 밁 QY В Ş 멼 Š

밁

```
CURRENT APPLICATION NUMBER: US/60/465,241
CURRENT FILING DATE: 2003-04-23
NUMBER OF SEQ ID NOS: 258418
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 6422
SEQ ID NO 6422
LENGTH: 802
TYPE: PRT
ORGANISM: Homo sapiens
US-60-465-241-6422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 15
US-60-465-241-6422
; Sequence 6422, Application US/60465241
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
Search completed: June 11, 2003, 16:11:34 Job time: 100 secs
                                                                                                밁
                                                                                                                                       Ş
                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 74; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: CARGILL, Michele
APPLICANT: BEGOVICH, Ann
TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TITLE OF INVENTION: RHEUMATOID ARTHRITIS, METHODS OF DETECTION AND USES THEREOF
FILE REFERENCE: CL001468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            113 YFSVNVSAVAPY-WTSPEKMEKKLHAVPAAKTVKFKCPSSGTPNPTLRWLKNGKE----F 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   219 ERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDPQPHIQWLKHIE 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 198 H------LEAKV-LNYTYE-KSNYEVKIK------ELNYLKTIQ 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             139 AND-VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVI 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             103
                                                                                             219 ERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDPQPHIQWLKHIE 264
                                                                                                                                                                                                                                     139 AND-VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVI 197
                                                                                                                                                                                                                                                                                    113 YFSVNVSAVAPY-WTSPEKMEKKLHAVPAAKTVKFKCPSSGTPNPTLRWLKNGKE----F 167
                                                                                                                                                                                           168 KPDHRIGGYKVRYATWSIIMDSV---VPSDKGN-----YTCIVENEYGSINHTYQLDVV 218
                                                                                                                                                                                                                                                                                                                                103 ----NYVVKDPYKFLNKEKRDKFL--------SSYNYIKDSIDTDINF 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     57 LRDDVQSINWLRDGVQLAESNRTRITGEE----VEVQDSVPADSGLYACVTSSPSGSDTT 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60 LENNYMTEN-----VNVKDILNSRFNKRENFKNVLESDLIP-----YKDLTSS------ 102
                                                                                                                                                                                                                                                                                                                                                                               57 LRDDVQSINWLRDGVQLAESNRTRITGEE----VEVQDSVPADSGLYACVTSSPSGSDTT 112
                                                                                                                                                                                                                                                                                                                                                                                                                              60 LENNVMTFN-----VNVKDILNSRFNKRENFKNVLESDLIP-----YKDLTSS----- 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MWSWKCLLFWAVLVTATLCTAGAAVT-PSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQ 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MWSWKCLLFWAVLVTATLCTARPSPTLPEQAQPWGAPVEVESFLVH----PGDLLQLRCR 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KPDHRIGGYKVRYATWSIIMDSV---VPSDKGN-----YTCIVENEYGSINHTYQLDVV 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---NYVVKDPYKFLNKEKRDKFL--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7.0%; Score 144.5; DB 7; ilarity 25.9%; Pred. No. 4.4e-05; Conservative 41; Mismatches 90;
                                                                                                                                            -LEAKY-LNYTYE-KSNVEVKIK----
                                                                                                                                       --ELNYLKTIQ 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 802;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels 81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---SSYNYIKDSIDTDINF 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to he score greater than or equal to the score of the result being and is derived by analysis of the total score distribution.
                     1919.5
1919.5
1879
1874
1874
1684.5
1326
                                                                                                                                                                                                                              Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length: 0
length: 2000000000
                                                                                                                                                                                                                            Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  June 11, 2003, 16:02:30; Search time 73 Seconds (without alignments) 700.935 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-500-376-8
2063
  93.2
93.2
93.0
93.0
91.1
90.8
90.8
81.7
64.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  908470 seqs, 133250620 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MWSWRCLLFWAVLVTATLCT......KPDSYPLFDGIFCSHHHHHH 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Geneseq_101002:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1983.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1984.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1985.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1980.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1981.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIDS2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1982.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                            /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2000.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2001.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2002.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1993.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1994.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1995.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1996.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1997.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \(\sum_{\text{SIDS2/gcgdata/geneseq/geneseqp}}\) - emb1/AA1986. DAT:*
\(\sum_{\text{SIDS2/gcgdata/geneseq/geneseqp}}\) - emb1/AA1987. DAT:*
\(\sum_{\text{SIDS2/gcgdata/geneseq/geneseqp}}\) - emb1/AA1988. DAT:*
\(\sum_{\text{SIDS2/gcgdata/geneseq/geneseqp}}\) - emb1/AA1989. DAT:*
\(\sum_{\text{SIDS2/gcgdata/geneseq/geneseqp}}\) - emb1/AA1989. DAT:*
\(\sum_{\text{SIDS2/gcgdata/geneseq/geneseqp}}\) - emb1/AA1991. DAT:*
\(\sum_{\text{SIDS2/gcgdata/geneseq/geneseqp}}\) - emb1/AA1992. DAT:*
                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1998.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1999.DAT:*
1654
262
375
                                                              361
361
376
376
376
1639
355
                                                                                                                                                                                                                              DB
                                                              20
20
20
20
20
20
20
                                        AAP50777
                                                                                                                                                                                                                              占
                                                                                                                       AAY09373
AAY05833
AAY09374
AAY05834
                                                                                 AAW54145
AAY09372
                                                              AAY05832
                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                908470
                                  P. falciparum synt
Merozoite surface
Merozoite surface
Sequence of the Pl
                                                                                                                   Merozoite surface
Merozoite surface
Modified merozoite
Modified merozoite
                                                                                                                                                                                                                        Description
                                                                                                                                                                                                                                                                                                                                                to have a being printed,
```

139.5	141.5	141.5	141.5	141.5	141.5	142.5	143.5	143.5	143.5	143.5	144	146	146.5	148.5	149	152.5	168.5	196.5	253.5	268	274	279	282	284.5	284.5	290	293	370.5	539	539	539	539	542	4
6.8	6.9	٠	6.9	٠	٠	٠	٠			٠		7.1		7.2	7.2	•	•	٠	12.3	•		٠	•	٠	13.8	٠		18.0	•	26.1	•	26.1	26.3	•
822	822	822	822	820	384	820	2500	1712	1516	722	816	622	2539	2013	1714	2184	980	350	106	93	54.	49	49	2028	1807	108	514	206	127	127	116	116	96	108
22	13	13	12	19	23	20	21	21	21	21	14	21	21	21	21	22	21	21	14	22	14	14	14	22	22	22	14	22	18	18	18	18	22	22
AAU04694	AAR26337	AAR20750	AAR13549	AAW63844	ABP39824	AAY06458	AAB18272	AAB18205	AAB18195	AAB18291	AAR39647	AAY97170	AAB18198	AAB18265	AAB18275	AAE00425	AAB18294	AAY70278	AAR41358	AAB37611	AAR41357	AAR41355	AAR41354	S.	AAB85697	4	AAR41356	AAU00669		N	AAW22592	AAW36103	AAB37608	AAB37609
Mouse fibroblast g	Im. Homo	flg receptor prote	c FGF r	Mouse bFGF recepto	0					dium	fibro	20		lasmodium	a	~	+			surf			GF1-1i		₽-		GF2-1i		S	1(p19)S	P	9		Merozoite surface

ALIGNMENTS

RESULT 1 AAY09373 MSP-1; merozoite surface protein; malaria; vaccine; protein engineering; protein expression; codon usage; transgenic animal. Chen LH, 15-MAY-1998; 20-OCT-1997; 20-OCT-1998; 29-APR-1999 W09920774-A2 Plasmodium falciparum Merozoite surface protein MSP-1-42. 31-AUG-1999 (first entry) AAY09373 standard; Protein; 361 AA. (GENZ) GENZYME TRANSGENICS CORP. Meade H; 98US-0085649. 97US-0062592. 98WO-US22226

1161.

AAB37610 AAB83926

A major merozoite Merozoite surface

WPI; 1999-288313/24. P-PSDB; AAX56009.

Modified malarial protein for use in anti-malarial vaccines

```
RESULT 2
AAY05833
                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
Š
                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Sim
Matches 360;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This present sequence comprises a 42 kDa C-terminal portion of malaria merozolte surface protein MSP-1 (1e. MSP-1-42), an important target for the development of a vaccine against Plasmodium falciparum. The C-terminal end of the sequence is modified to include a 6xHis tag. A nucleic acid (see AAX56008) encoding MSP-1-42 has been modified according to a method of the invention in order to improve expression in mammalian cells and in transgenic animals by reducing the AT content and removing mRNA instability motifs. The invention allows expression of MSP-1-42 in the milk of transgenic animals, and also provides a DNA vaccine comprising a vector containing the altered MSP-1-42 nucleic
          20-OCT-1998;
                                                                                    Plasmodium falciparum
                                                                                                            protein engineering;
transgenic animal.
                                                                                                                                    MSP-1; merozoite surface protein; malaria; vaccine;
                                                                                                                                                                                                                                         AAY05833
                                                                                                                                                            Merozoite surface protein
                                                                                                                                                                                       02-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                              384
                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                               324
                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24
                                                                                                                                                                                                                                                                                                       I
                                                                                                                                                                                                                                                                                                                                Ħ
                                                                                                                                                                                                                                                                                                                                                      DKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCSHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                     VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRE
                                                                                                                                                                                                                                         standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL 143
                                                                                                                                                                                                                                                                                                                                                                                                        VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRE
                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>ب</u>
          98WO-US22225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35pp;
                                                                                                                                                                                                                                         Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93.28;
                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 English
                                                                                                                                                              MSP-1-42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                        expression; codon usage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 1922; DB 20;
Pred. No. 3.5e-127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                              323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                        300
```

RESULT 3
AAY09374
ID AAY0

AAY09374

standard; Protein;

143 120 203 203 180 263 263 323 300

```
Ş
                                                                   В
                                                                                                   Š
                                                                                                                                     밁
                                                                                                                                                                     Ş
                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 culture systems or in transgenic animals. The preferred difficult protein candidates for expression are those derived from lower organisms such as parasites, bacteria and viruses that have DNA coding sequences of high AT content or which have mRNA instability motifs or rare codons relative to the recombinant expression system to be used. The invention allows expression of MSP-1 in the milk of transgenic animals, and also provides a DNA vaccine comprising a vector containing the altered MSP-1-42 nucleic acid.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This present sequence comprises a 42 kDa C-terminal portion of malaria merozoite surface protein MSP-1 (i.e. MSP-1-42), an important target for the development of a vaccine against plasmodium falciparum. The C-terminal end of the sequence is modified to include a 6xHis tag. Nucleic acids (see AAX25586 and AAX25593) encoding MSP-1-42 have been modified according to a method of the invention in order to improve expression in mammalian cells and in transgenic animals. The invention provides modified recombinant nucleic acid sequences and methods for increasing the mRNA levels and protein expression of proteins that are difficult to express in cell culture systems, especially mammalian cell culture systems or in transgenic animals. The preferred difficult
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New modified recombinant nucleic acid sequences useful for producing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Disclosure; Fig 2; 43pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GENZ ) GENZYME TRANSGENICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15-MAY-1998;
20-OCT-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1999-302742/25
                               384 H
                                                                                   324 DKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCSHHHHH
361
                                                                   301
                                                                                                                                     241
                                                                                                                                                       264 · VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                          181
                                                                                                                                                                                                                                          204
                                                                                                                                                                                                                                                                                                              144
                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360;
                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                   24
                                                                                                                                                                                                                                                                                                                                                                                                                 Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity 99.7
                                                                                                                                                                                                                                                                                                                                                                                                              Ξ
                                                                                                                                                                                                                            LNYTYEKSNYEYKIKELNYLKTIQDKLADFKKNNNFYGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                               GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKV
                                                                                                                                                                                                                                                                                                                                                              NFKNVLESDLIPYKDLISSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                                                                                                     VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                        LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                            GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEAKV
                                                                                                                                                                                                                                                                                                                                            NEKNYLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA vaccine
                                 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0085649
97US-0062592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 1922; DB 20;
Pred. No. 3.5e-127;
D; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
```

Ş 밁 S 멍

밁

Ş

문

```
Ş
                                  밁
                                                    δÃ
                                                                          밁
                                                                                             Ş
                                                                                                                     멍
                                                                                                                                                                                                          Qy
                                                                                                                                                              Query Match
Best Local Similarity
Matches 364; Conserv
                                                                                                                                                                                                                         The present sequence represents a 42 kDa C-terminal portion of malaria merozoite surface protein MSP-1 (i.e. MSP-1-42), an important target for the development of a vaccine against plasmodium falciparum. The sequence has been modified to include an N-terminal beta-casein signal peptide and an N-terminal 6xHis tag. In addition, N181Q and N262Q mutations have been introduced eliminate 2 N-glycosylation sites. These modifications allow the MSP-1-42 protein to be expressed in the milk of transgenic mice.
                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                Modified
                                                                                                                                                                                                                                                                                                                                                                     P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                   Chen LH,
                                                                                                                                                                                                                                                                                                                                                                                                                                             15-MAY-1998;
20-OCT-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29-APR-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic.
                                                                                                                                                                                                                                                                                                                           Example; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO9920774-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  transgenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MSP-1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Modified merozoite surface protein MSP-1-42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY09374;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                       (GENZ )
                                                                                                                                                                                                                                                                                                                                                                              1999-288313/24
             191
                                  123
                                                       131
                                                                           63
                                                                                              71
                                                                                                                                          12
                                                                                                                      ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     merozoite surface protein; malaria; vaccine;
                                                                                                                                                                                                                                                                                                                                                                     AAX56008
                                                                                                                                                                                                                                                                                                                                                                                                                       GENZYME TRANSGENICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               engineering;
nic animal; mu
KIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYN
                               SIDTDINFANDVLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVND
                                           SIDTDINFANDVLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTYNH
                                                                                                                   VLVTATL-CTAGAAVTESVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNWATENVN
                                                                         VKDILNSRFNKRENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKD
                                                                                    VKDILNSRFNKRENFKNVLESDLIPYKDLISSNYVVKDEYKFLNKEKRDKFLSSYNYIKD
                                                                                                                                                                                                                                                                                                                                                malarial
                                                                                                                                                                                                                                                                                                                                                                                                   Meade
                                                                                                                                                                                                         376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           falciparum
                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                         11; 35pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                             980S-0085649.
970S-0062592.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98WO-US22226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note= "Asn in native 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note-
197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note- "beta-casein 371..376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                               protein for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g; protein expression; codon usage; mutant.
                                                                                                                                                                       93.0%;
                                                                                                                                                                                                                                                                                                                           English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Asn in native
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "6xHis tag"
                                                                                                                                                              1;
                                                                                                                                                             Score 1919.5; DB 2
Pred. No. 5.5e-127;
1; Mismatches 8;
                                                                                                                                                                                                                                                                                                                                               use
                                                                                                                                                                                                                                                                                                                                               'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         signal
                                                                                                                                                                                                                                                                                                                                               anti-malarial vaccines
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MSP-1-42 (N262Q mutation)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MSP-1-42 (N181Q mutation)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        peptide
                                                                                                                                                                                 20;
                                                                                                                                                              Indels
                                                                                                                                                                                 Length
                                                                                                                                                                                  376;
                                                                                                                                                             1;
                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                ç
                                                    190
                                                                                             130
                                182
                                                                         122
                                                                                                                    62
           250
```

```
RESULT 4
ADAYO5834
ID ANYO
XX ANYO
XX ANYO
XX MSP
XX MSP
XX MSP
XX WSP
XX WSP
XX WSP
XX FT Pept
FT Pept
FT Pept
FT M1sc
FT W1sc
FT W1sc
FT W1sc
FT W1sc
FT W1sc
FT M1sc
FT M1s
                  The present sequence represents a 42 kDa C-terminal portion of malaria merozoite surface protein MSP-1 (1.e. MSP-1-42), an important target for the development of a vaccine against plasmodium falciparum. The sequence has been modified to include an N-terminal beta-casein signal peptide and an N-terminal 6xHis tag. In addition, N1810 and N2620 mutations have been introduced eliminate 2 N-glycosylation sites. These modifications allow the MSP-1-42 protein to be expressed in the milk of transgenic mice. The invention generally relates to modified recombinant nucleic the milk of transgenic mice.
                                                                                                                                                                                                                                                                                                                            New modified recombinant nucleic malarial DNA vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15-MAY-1998;
20-OCT-1997;
                                                                                                                                                                                                                                                                        Example; Fig 11; 43pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1999-302742/25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (GENZ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        W09920766-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MSP-1; merozoite surface protein; malaria; vaccine; protein engineering; protein expression; codon usag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  02-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY05834;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAY05834 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cransgenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               363
                                                                                                                                                                                                                                                                                                                                                                                                       AAX25593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENZYME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              merozoite surface protein MSP-1-42.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LFDGIFCSHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KIDLFVIHLEAKVLQYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LFDGIFCSHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Meade
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 animal; mutant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0085649
97US-0062592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98WO-US22225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ħ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSGENICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note= "Asn in 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note= "beta-casein 371..376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note= "6xHis
197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
l..15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Asn in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      expression; codon usage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tag"
increasing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       native MSP-1-42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      native
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ξ
                                                                                                                                                                                                                                                                                                                                                 acid sequences useful for producing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   signal peptide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MSP-1-42
the mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (N262Q mutation)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (N181Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mutation) "
                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           370
```

```
RESULT 5
AAW54145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cell culture systems, mammalian cell culture systems or in transgenic animals. The preferred difficult protein candidates for expression are those derived from lower organisms such as parasites, bacteria and viruses that have DNA coding sequences of high AT content or which have mRNA instability motifs or rare codons relative to the recombinant expression system to be used.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein expression of proteins that are difficult to cell culture systems, mammalian cell culture systems transgenic animals. The preferred difficult protein
WPI; 1998-240088/21
N-PSDB; AAV21451, A
                                                                                                                                                                                                                                                     Synthetic.
                                                                                                                                                                                                                                                                     Plasmodium
                                                                                                                                                                                                                                                                                                                       gp190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW54145
                                             Bujard H,
                                                                                                                02-OCT-1996;
                                                                                                                                                   02-OCT-1997;
                                                                                                                                                                                    09-APR-1998
                                                                                                                                                                                                                   W09814583-A2
                                                                                                                                                                                                                                                                                                                                                                                        23-SEP-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                (BUJA/)
                                                                                                                                                                                                                                                                                                                                                       falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12
                                                                                                                                                                                                                                                                                                                      malaria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                w
                                                                                  BUJARD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HUNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDER 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KIDLFVIHLEAKYLNYTYEKSNYEYKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYN 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIDTDINFANDVLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIDTDINFANDVLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                           standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LFDGIFCSHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EECKCLLNYKQEGDKCYENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KIDLEVIHLEAKVLQYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VKDILNSRFNKRENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VKDILNSRFNKRENFKNVLESDLIPYKDLISSNYVVKDPYKFLNKEKRDKFLSSYNYIKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LFDGIFCSHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLQISQHQCVKKQCPQNSGCFRHLDER
                                             Pan W,
                                                                                                                                                                                                                                                                   falciparum
                                                                                                                                                                                                                                                                                                      antibody;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                376 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                        (first
                                                                                                                                                                                                                                                                                                                                                   synthetic gp190 protein.
                                                                                H
                                                                                                                96DE-4040817
                                                                                                                                                 97WO-EP05441
                                                                                                                                                                                                                                                                                                                      MSP-1; merozoite surface
 AAV35363
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein; 1639
                                                 Tolle R;
                                                                                                                                                                                                                                                                                                                                                                                        entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93.0%;
                                                                                                                                                                                                                                                                                                        passive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 1919.5; DB 20
Pred. No. 5.5e-127;
1; Mismatches 8;
                                                                                                                                                                                                                                                                                                        immunisation;
                                                                                                                                                                                                                                                                                                                      protein;
                                                                                                                                                                                                                                                                                                      parasite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20;
                                                                                                                                                                                                                                                                                                                      stability;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              express
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in
                                                                                                                                                                                                                                                                                                                       vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62
```

Š 문 Ωy 밁 Q В δÃ 밁 δÃ 밁 Š 밁 Ş

밁

Ħ

AC XXX AC

15-MAY-1998; 20-OCT-1997;

98US-0085649. 97US-0062592. 98WO-US22226

20-OCT-1998; 29-APR-1999

```
RESULT 6
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                      닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This sequence represents a modified Plasmodium falciparum gp190/MSP-1 (merozoite surface) protein. The gene encoding this protein has been stabilised by reducing the AT content of the nucleotide sequence. Such a protein is useful in vaccines against malaria or for producing monoclonal antibodies (for passive immunisation). The complete gp190 protein can now be produced outside the parasite and has, at least over extended regions, the native pattern of folding. Larger amounts of the protein can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Recombinant production of complete gp190/MSP-1 Plasmodium protein - useful in anti-malaria vaccines, also stabilisin reducing their AT content
                                                                                                                                        Plasmodium falciparum
                                                                                                                                                                 protein engineering;
transgenic animal.
                                                                                                                                                                                              MSP-1; merozoite surface
                                                                                                                                                                                                                                                     31-AUG-1999
                                                                                                                                                                                                                                                                                                           AAY09372 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 1; Fig 3c; 48pp; German.
                                                                                                              W09920774-A2
                                                                                                                                                                                                                           Merozoite
                                                                                                                                                                                                                                                                                 AAY09372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 produced recombinantly than would
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Sinhes 355;
                                                                                                                                                                                                                                                                                                                                                                                  1562
                                                                                                                                                                                                                                                                                                                                                                                                                                      1502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1322 RENFKNYLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1262 GEAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            142
                                                                                                                                                                                                                                                                                                                                                                                                           322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   82 RENFKNYLESDLIPYKDLTSSNYVYKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22 GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                               EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GMYFENLAKTYLSNLLDGNLQGMLNISQHQCYKKQCPQNSGCFRHLDEREECKCLLNYKQ 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KYLNYTYEKSNYEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KVLNYTYEKSNYEYKIKELNYLKTIQDKLADFKKNNNFYGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                                                      GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ 1561
                                                                                                                                                                                                                           surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                         protein MSP-1-42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91.18;
99.48;
                                                                                                                                                                                 protein expression;
                                                                                                                                                                                              protein; malaria;
                                                                                                                                                                                                                                                                                                            355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1879; DB 19;
Pred. No. 2.5e-123;
0; Mismatches 2;
                                                                                                                                                                                                                                                                                                            Å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 be possible using the parasites
                                                                                                                                                                                 codon usage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                stabilising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ng genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ā
                                                                                                                                                                                                                                                                                                                                                                                                           378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       261
```

(GENZ) GENZYME TRANSGENICS

CORP

```
RESULT 7
AAY05832
 Ş
                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                      ρy
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 354;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present sequence represents a 42 kDa C-terminal portion of malaria merozoite surface protein MSP-1 (i.e. MSP-1-42), an important target for the development of a vaccine against plasmodium falciparum. The nucleic acid sequence encoding MSP-1-42 has been modified (see AAX56008) compared to the native sequence (se AAX56009) such that 306 nucleotide positions have been replaced to lower the AT content (from 76 to 49.7%) and to eliminate 10 mRNA lower the AT content (from 76 to 49.7%) and to eliminate 10 mRNA
 Plasmodium
                                       MSP-1; merozoite surface protein; malaria; vaccine; protein engineering; protein expression; codon usag
                                                                                Merozoite surface
                                                                                                            02-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mammalian cell culture systems or in transgenic animals. The invention allows expression of MSP-1 protein in the milk of transgenic animals, and also provides a DNA vaccine comprising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            instability motifs while maintaining the same protein amino acid sequence. These alterations allow MSP-1-42 to be expressed in mammalian cell culture and in transgenic mice. Native MSP-1-12 is known to be difficult to express in cell culture systems,
                           transgenic
                                                                                                                                                                AAY05832 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Modified malarial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1999-288313/24
                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24 AVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        containing
                          engineering;
nic animal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fig
                                                                                                                                                                                                                                                DKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                        DKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                    VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                            NEKNYLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NFKNVLESDLIPYKDLISSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRE
falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               355 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                           (first
                                                                               protein MSP-1-42.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the altered MSP-1-42 sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein for
                                                                                                                                                                Protein;
                                                                                                         entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               English.
                                                                                                                                                                 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1874; DB 20;
Pred. No. 8.1e-124;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           use
                                                                                                                                                                ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in anti-malarial vaccines
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                              378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (see
                                                                                                                                                                                                                                                                                                                                                                         263
                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
δÃ
                                                                                         Š
                                                                                                                            밁
                                                                                                                                                      δÃ
                                                                                                                                                                                       밁
                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present sequence represents a 42 kDa C-terminal portion of malaria merozoite surface protein MSP-1 (i.e. MSP-1-42), an important target for the development of a vaccine against plasmodium falciparum. The nucleat acid sequence encoding MSP-1-42 has been modified (see AAX25586) compared to the native sequence (see AAX25587) such that 306 nucleotide positions have been replaced to Lower the AF content (from 76 to 49.7%) and to eliminate 10 mRNA sequence. The AF content (from 76 to 49.7%) and to eliminate 10 mRNA instability motifs while maintaining the same protein amino acid sequence. These alterations allow MSP-1-42 to be expressed in mammalian cell culture and in transgent mice. The invention provides modified recombinant nucleic acid sequences and methods for increasing the mRNA levels and protein expression of proteins that are difficult to express in cell culture systems, mammalian cell culture systems or in transgenic animals. The preferred difficult protein candidates for expression are those derived from lower corganisms such as parasites, bacteria and viruses that have DNA coding sequences of high AF content or which have mRNA instability motifs or rare codons relative to the recombinant expression system to be used. The invention allows expression of MSP-1 protein in the milk of transgenic animals, and also provides a DNA vaccine
                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     malarial DNA vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1999-302742/25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (GENZ )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15-MAY-1998;
20-OCT-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          W09920766-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , HT
                               324
                                                                                            264
                                                                                                                            181
                                                                                                                                                          204
                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENZYME
                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                      VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
              DKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                          LNYTYEKSNVEVKIKELNYLKTIODKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                         LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                     NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                                                                                                                                                                                                                                       NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                           VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Meade
                                                                                                                                                                                                                                                                                                                                                                                                                                                   355
                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                recombinant nucleic acid sequences useful for producing
                                                                                                                                                                                                                                                                                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0085649
97US-0062592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Η;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98WO-US22225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1; 43pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSGENICS
                                                                                                                                                                                                                                                                                                                                                                                                  90.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORP
                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                Score 1874; DB 20;
Pred. No. 8.1e-124;
                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                  355;
                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                 Gaps
355
```

240

263

300 323 180 203 120

밁

1576 QEGSKCVENSNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDCYPLSMVIFCS

1633

```
Ş
                                                                                                                                                                                                                                                                                                                  RESULT 8
Ş
                         밁
                                              Ş
                                                                         밁
                                                                                            ρy
                                                                                                                       밁
                                                                                                                                                                                           Ş
                                                                                                                                                                                                                     밁
                                                                                                                                                                      밁
                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-SEP-1984;
22-FEB-1984;
21-FEB-1985;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cloned DNA sequence encoding plasmodium falciparum protein useful for expressing the protein for use in vaccines again
                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 6; Fig 1; 51pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EP154454-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Malaria vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAP50777;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAP50777 standard;
                                                                                                                                                                                                                                                                                                                                                                                                    The sequence encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                    malaria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-FEB-1985;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11-SEP-1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence of the
                                                                                                                                                                                                                                                                                                                                        The sequence encoding the P195 protein of Plasmodium falciparum (AAN50530) and a peptide comprising at least one of its epitopes (AEAP50777) are claimed. Also claimed is a vaccine for inducing famunity to malaria comprising the novel peptide or P195 or a peptide comprising at least one epitope when derived from the new DNA sequence, together with a carrier.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (WELL ) WELLCOME FOUNDATION LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-SEP-1991
                                                                                                                                                                                                                                                                               ocal Similarity
                         1516
                                                                         1456
                                                                                                                         1396
                                                                                                                                                                                                                      1276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1985-224845/37.
 321
                                                 262
                                                                                               202
                                                                                                                                                                                                                                                                     327;
                                                                                                                                                                                              82
                                                                                                                                                                                                                                             22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAN50530.
                                                                                                                                                                                                                                 GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                 VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA
                                                                                                                                                                                   RENFKNYLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND 141
QEGDRCVENPNPTCNENNGGCDADARCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                      VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEA 1455
                                                                                                                                                                                                                     GEAVTTSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK 1335
                     GMVFENLAKTYLSNLLDGNL-QGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYK 320
                                                                      KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                  KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                      RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sandhu
                                                                                                                                                                                                                                                                                                                  1654 AA;
                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84GB-0024340.
84GB-0004692.
85GB-0004429.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 85EP-0301173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P195 protein of Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              epitope;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entry)
                                                                                                                                                                                                                                                                             81.7%;
91.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                           English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Odink
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               antigen; immunogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ζ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1654
                                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                                                                                  Score 1684.5; DB 6;
Pred. No. 1.2e-109;
5; Mismatches 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lockyer M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Riveros-Moreno
                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                              against
                                                                                                                                                                                                                                                                                           1654;
                                                                                                                                                                                                                                                                                                                                                                           inducing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۲
                                                                                                                                                                                                                                                                  1:
                                                                                                                                                                                                                                                                  Gaps
378
                                                                                              261
                                                                                                                                              201
                                                                                                                                                                      1395
```

```
RESULT 9
AAB37610
                                                                                                밁
 밁
                     Ş
                                                 밁
                                                                    δō
                                                                                                                      Š
                                                                                                                                                 밁
                                                                                                                                                                     Ş
                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                  fragment of a Plasmodium merozoite surface protein-1 (MSP-1). The non-natural variants have reduced affinity for at least 1 antibody capable of blocking a second antibody that inhibits the proteolytic cleavage of Plasmodium MSP-1_4_2, and has the same affinity for at least one third antibody that inhibits the proteolytic cleavage of Plasmodium MSP-1_4_2, compared to natural MSP-1_19. The non-natural variants of the present invention are useful for immunising a mammal against malaria, and can be used to treat malaria. The present sequence is MSP-133 protein.
                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                  The present invention relates to non-natural variants of a C-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                      Novel variants of the C-terminal fragment surface protein-1, useful as vaccines for malaria -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20-APR-1999;
13-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB37610;
                                                                                                                                                                                                                                                                                                                                                                                             Example
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Holder
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (MEDI-) MEDICAL RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-APR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200063245-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Merozoite surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAB37610
                                                                                                                                                                                                           Local
 181
                                                 121
                                                                       144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001-015762/02
)B; AAC68978.
                                                                                                                                                                                                260;
                                                                                                61
                                                                                                                         84
                                                                                                                                                                        24
                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                           5; Fig
          LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                          GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKV
                                                                                                                                                              AVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRE
LQYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                            NFKNYLESDLIPYKDLTSSNYVYKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDYL 143
                                                GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEAKV
                                                                                               NEKNYLESDLIPYKDLTSSNYVYKDPYKELNKEKRDKELSSYNYIKDSIDTDINFANDVL
                                                                                                                                                 AVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           surface
                                                                                                                                                                                                                                               262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Birdsall
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            falciparum
                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000WO-GB01558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99GB-0009072.
99US-0311817.
99CA-2271451.
                                                                                                                                                                                                                                               Ą
                                                                                                                                                                                                                                                                                                                                                                                          15; 126pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein-133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNCIL.
                                                                                                                                                                                                         64.3%;
99.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Feeney
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protazoacide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  262
                                                                                                                                                                                               Score 1326; DB 22
Pred. No. 1.9e-85;
); Mismatches 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Morgan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   vaccine; malaria.
                                                                                                                                                                                                                                                                                                                                                                                                                           of Plasmodium
treating or pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ξ
                                                                                                                                                                                                                      22;
                                                                                                                                                                                                2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Syed
                                                                                                                                                                                                Indels
                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                              preventing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Uthaipibull
                                                                                                                                                                                                                                                                                                                                                                                                                                          merozoite
                                                                                                                                                                                               0
                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     G
                                                                       203
                                                                                                                                                                      83
                                                                                                                                               60
240
                                                                                               120
```

```
Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 10
AAB83926
ID AAB83
  밁
                     Ş
                                             밁
                                                                                       망
                                                                                                            δõ
                                                                                                                                   밁
                                                                                                                                                       Ş
                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                Matches
                                                                                                                                                                                                                                             The present sequence represents a major merozoite surface protein-1 C-terminal fragment of 42kDa (MSP1-42). This fragment is linked to a melittin signal peptide, and then expressed in a in a silkworm/baculovirus system. The protein is used to prepare a malaria vaccine, which is used to treat or prevent malaria, caused any of the four species of plasmodium that infect humans.
                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                              Producing malaria vaccine, useful for treatment or prevention of all forms of malaria in humans, by expressing immunogenic merozoite protein fragment in a baculovirus system -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                (UYCH-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A major merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAB83926
                                                                                                                                                                                                                                                                                                                            Example
                                                                                                                                                                                                                                                                                                                                                                                                                             Hui GSN, Lap-Yin P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12-NOV-1999;
01-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200134188-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Major
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAB83926 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   (QUEE-)
  187
                                                                                                                                                                                                                                                                                                                                                                                             2001-335879/35.
DB; AAF89840.
                       190
                                             127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  merozoite 
ia vaccine.
                                                                                        67
                                                                                                            90
                                                                                                                                               30 IDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRENFKNVL
                                                                                                                                                                                218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  UNIV HAWAII.
UNIV CHINESE HONG
QUEEN EMMA FOUND.
                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                            ω
••
                                                        SEKYKSDLDSIKKYI
NKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNPYDFEAIKKLINDD
                                                                                                          ESDLIPYKDLTSSNYVYKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVLGYYKIL
                                                                                                                                MDNILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIFTFNLNLNDILNSRLKKRKYFLDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VFENLAKTVLSNLLDGNLQGML
                      HKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDY
                                           LAKYKDDLESIKKVIKEEKEKFPSSPPTTPPSPAKTDEQKKESKFLPFLTNIETLYNNLV
                                                                                       ESDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQEGISYYEKV
                                                                                                                                                                                                                                                                                                                           Page 87-88;
                                                                                                                                                                                                                            375 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0165178.
99US-0168327.
2000US-0226861.
                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000WO-US31064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein;
                                                                                                                                                                                        56.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                             НО
                                                                                                                                                                                                                                                                                                                           95pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein-1; MSP1-42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              KONG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein-1 fragment of 42kDa
                                                                                                                                                                               54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     375
                                                                                                                                                                              Score 1161.5; DB 22; Pred. No. 1.1e-73; 4; Mismatches 76; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            melittin signal peptide;
                                                        | NDKQGENEKYLPFLNNIETLYKTVN
                                                                                                                                                                              Indels
                                                                                                                                                                                                 Length
                                                                                                                                                                                                   375
                                                                                                                                                                            21;
                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                         γģ
                                                                                                                                                                                                                                                                                          þ
                      249
                                                                 189
                                                                                      126
                                                                                                                                  66
                                           186
                                                                                                                                                                            2;
         Ş
                               밁
```

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                 Query Match
Best Local
                                        Matches
                                                                                                                                                                                                                                                                                                                                               20-APR-1999;
13-MAY-1999;
25-MAY-1999;
                                                                                                  The present invention relates to non-natural variants of a C-terminal fragment of a Plasmodium merozoite surface protein-1 (MSP-1). The non-natural variants have reduced affinity for at least 1 antibody capable of blocking a second antibody that inhibits the proteolytic cleavage of Plasmodium MSP-1_4_2, and has the same affinity for at least one third antibody that inhibits the proteolytic cleavage of Plasmodium MSP-1_19. The non-natural variants of the present invention are useful for immunising a mammal against malaria, and can be used to treat malaria. The present sequence is MSP-119 protein.
                                                                                Sequence
                                                                                                                                                                                                           Example 5;
                                                                                                                                                                                                                                malaria
                                                                                                                                                                                                                                           surface
                                                                                                                                                                                                                                                     Novel variants
                                                                                                                                                                                                                                                                                                        Holder
                                                                                                                                                                                                                                                                                                                                                                                         20-APR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                              26-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200063245-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Merozoite surface protein; protazoacide; vaccine; malaria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Merozoite surface protein-119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB37609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAB37609
                                                                                                                                                                                                                                                                                                                           (MEDI-)
                                                                                                                                                                                                                                                                                  2001-015762/02.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  247 TKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENSGCFRHLDE
                                       93;
7
                                                                                                                                                                                                                                                                                                       ۶
                                                                                                                                                                                                                                  ariants of the C-terminal fragment protein-1, useful as vaccines for
                                                                                                                                                                                                                                                                         AAC68977
                                                                                                                                                                                                                                                                                                                           MEDICAL
                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PLFDGIFCS
        NLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSY
                                                                                                                                                                                                          Fig
                                                                                                                                                                                                                                                                                                       Birdsall
                                                                                108
                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                         2000WO-GB01558
                                                                                                                                                                                                                                                                                                                                              99GB-0009072.
99US-0311817.
99CA-2271451.
                                                                                 Ŗ,
                                                                                                                                                                                                           15;
                                                                                                                                                                                                                                                                                                                            RES
                                                                                                                                                                                                         126pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Protein; 108
                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                           COUNCIL
                                                 26.5%;
                                                                                                                                                                                                                                                                                                      Feeney
                                                                                                                                                                                                          English
                                      Score 546; DF Pred. No. 4.26
4; Mismatches
                                                                                                                                                                                                                                                                                                      'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ã
                                                546; DB 22;
No. 4.2e-31;
                                                                                                                                                                                                                                                                                                      Morgan
                                                                                                                                                                                                                                                                                                      ξ
                                                                                                                                                                                                                                      of Plasmodium merozoite treating or preventing
                                      2
                                                                                                                                                                                                                                                                                                      Syed
                                                          Length
                                       Indels
                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                      Uthaipibull C;
                                      0
                                                                                                           malaria, and
                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             369
                  339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  305
```

340 GCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS

HIEGRHNIAQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNG

밁

67

GCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS

105

```
RESULT 13
AAW36103
ID AAW36
XX
AC AAW36
XX
DT 25-MA
                                                                                                                                                                                                                         RESULT 12
AAB37608
                                                                                                                 Š
                                                                                                                                      ₽
                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                               Query Match
Best Local S
Matches 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20-APR-1999;
13-MAY-1999;
25-MAY-1999;
                                                                                                                                                                                                                                                   The present invention relates to non-natural variants of a C-terminal fragment of a Plasmodium merozoite surface protein-1 (MSP-1). The non-natural variants have reduced affinity for at least 1 antibody capable of blocking a second antibody that inhibits the proteolytic cleavage of Plasmodium MSP-1.4_2, and has the same affinity for at least one third antibody that inhibits the proteolytic cleavage of Plasmodium MSP-1.4_2, compared to natural MSP-1.1_9. The present sequence is the wild-type MSP-1 protein. This sequence was used to generate the variants of the present invention. The non-natural variants of the present invention are useful for immunising a mammal against malaria, and can be
                                                                                                                                                                                                                                                                                                                                                                                           surface
malaria
  25-MAR-1998
                      AAW36103
                                          AAW36103
                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                    Novel variants of the C-terminal fragment of Plasmodium merozoite surface protein-1, useful as vaccines for treating or preventing
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Holder
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200063245-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Merozoite surface protein; protazoacide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAB37608;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAB37608 standard; protein; 96 AA.
                                                                                                                                                                                                                                                                                                                                                                     Example 2; Page 48; 126pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-015762/02.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (MEDI-) MEDICAL RES COUNCIL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20-APR-2000; 2000WO-GB01558.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Merozoite surface protein-1.
                                                                                                                                                                                                                                             ç
                                                                                                        346 KCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
                                                                                                                                                            286
                                                                                              61
                                                                                                                                       _
                                                                                                                                                                                93;
                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                 protein-1,
                                                                                                                                                                                                                                             treat malaria.
                                                                                                                                                  NISQHQCYKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADA 345
                                          standard;
                                                                                                                                      NISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADA
                                                                                             KCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 93
                                                                                                                                                                                                                        96 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Birdsall B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     falciparum
                                                                                                                                                                                Conservative
 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99GB-0009072.
99US-0311817.
99CA-2271451.
                                         Protein;
                                                                                                                                                                                         26.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Feeney
                                           116
                                                                                                                                                                                0
                                                                                                                                                                                        Score 542; DB 22;
Pred. No. 6.9e-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŗ,
                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Morgan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ξ
                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Syed
                                                                                                                                                                                                  Length 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         malaria
                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Othaipibull
                                                                                                                                                                              0;
                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                       G
                                                                                                                                      60
                                                                                                                                                                               0
                                                                                KESULT 14
AAW22592
                                                                                                                                                                                                                                                     DR CCCCCCCCXXX PTT DR XXX
 XSXSXSX
                                                                        Ü
                                                                                                                           밁
                                                                                                                                              Š
                                                                                                                                                                   밁
                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             332
```

PfMSP1(p19)A protein sequence

AAW22592; 25-MAR-1998

(first entry)

AAW22592 standard; Protein;

116

₿

```
XOOXXXXXXXX
                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                     Matches
                                                                                                                                                                                                                                                           amino acids 1613-1705 of the Plasmodium falciparum merozoite surface protein 1 (MSP1).19 kD C-terminal fragment (plb), linked to a glycosylphosphatidylinositol membrane anchoring sequence. pl9 is the C-terminal fragment of the 42 kD MSP1 from Plasmodium species. The recombinant protein can be used for the production of anti-malarial vaccines, where the pl9 fragment provides a high level of protective immunity since it includes epitopes not presented in the p42 fragment.
                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                           This is the amino acid sequence of a recombinant protein comprising amino acids 1613-1705 of the Plasmodium falciparum merozoite surfac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Barnwell JW, Roth C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14-FEB-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Key
Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plasmodium
Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Fig 1B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           purification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Recombinant protein containing the merozoite surface protein-1 p19 fragment - useful in anti-malarial vaccines, diagnosis and protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 1997-425033/39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (INSP ) INST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14-FEB-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-AUG-1997.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9730158-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PfMSP1(p19)A protein sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-PSDB;
                   346 KCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
                                                                                            286 NISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADA
63
                                                                          ω
                                                                                                                                                     92;
KCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                        NISQHQCVKKQCPENSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             vivax; merozoite surface protein; MSP1; p19;
falciparum; malaria; vaccine; immunity; epit
                                                                                                                                                                                                                               116 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           falciparum
                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PASTEUR.
NEW YORK STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Longacre-Andre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       96FR-0001822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            97WO-FR00290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96..116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note= "amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                      85pp; French.
                                                                                                                                                                    26.1%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "glycosylphosphatidylinositol anchoring sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           fragment"
                                                                                                                                                 Score 539; DB 18;
Pred. No. 1.4e-30;
1; Mismatches 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mendis K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               derived
95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nato
                                                                                                                                                     0
                                                                                                                                                                                      Length 116;
                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             falciparum
                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MSP1 p19
                                                                                                                                               Gaps
                                                                        62
                                                                                                                                               0
```

```
RESULT 15
AAW22593
ID AAW22
XX AAW22
AC AAW22
XX DT 25-MA
XX Z5-MA
XX Chime
KW Plasm
XX
                                                                                                                                                                                                                                             ν
                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                         밁
                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                   Query Match
Best Local (
                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                        This is the amino acid sequence of a recombinant protein comprising amino acids 1613-1705 of the Plasmodium falciparum merozoite surface protein 1 (MSPI) 19 kD C-terminal fragment (p19), linked to a glycosylphosphatidylinositol membrane anchoring sequence. p19 is the C-terminal fragment of the 42 kD MSPI from Plasmodium species. The recombinant protein can be used for the production of anti-malarial vaccines, where the p19 fragment provides a high level of protective immunity since it includes epitopes not presented in the p42 fragment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Plasmodium
Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Key
Region
       Chimeric; Plasmodium vivax; merozoite surface protein; MSP1; p19; Plasmodium falciparum; malaria; vaccine; immunity; epitope.
                                             PfMSP1(p19)S
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Fig 1B; 85pp; French
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Recombinant protein containing Plasmodium merozoite surface protein-1 p42 fragment - useful in antimalarial vaccines, a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB;
                                                                      25-MAR-1998
                                                                                             AAW22593
                                                                                                                   AAW22593 standard;
                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Roth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Barnwell JW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-FEB-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14-FEB-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    W09730159-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YNYU)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (INSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1997-425034/39
DB; AAW22592.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ç
                                                                                                                                                                                                  346
                                                                                                                                                                                                                                    286 NISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADA 345
                                                                                                                                                                             63
                                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VINU
                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                            KCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                 KCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
                                                                                                                                                                                                                         NISQHQCVKKQCPENSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for diagnosis and protein purification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           vivax; merozoite surface protein; MSP1; p19;
falciparum; malaria; vaccine; immunity; epitope
                                                                                                                                                                                                                                                                                                                       116 AA;
                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NEW YORK
                                             protein
                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Longacre-Andre S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96FR-0001821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97WO-FR00291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96..116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YORK STATE
                                                                                                                  Protein;
                                                                                                                                                                                                                                                                                   26.1%;
                                             sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "amino acids
fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "glycosylphosphatidylinositol anchoring
                                                                                                                   127
                                                                                                                                                                                                                                                                       Score 539; DB 18;
Pred. No. 1.4e-30;
1; Mismatches 0;
                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mendis K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            derived
                                                                                                                                                                            95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           from P. falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nato
                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ħ
                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                               116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     also
                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    new
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MSP1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence
                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            p19
                                                                                                                                                                                                                         62
                                                                                                                                                                                                                                                                     0
```

Search completed: June Job time: 75 secs

11,

2003,

16:05:51

Ş 밁 Š

0

밁

```
Query Match
Best Local :
                                                                                                                             Matches
                                                                                                                                                                                                                This is the amino acid sequence of a chimeric protein comprising amino acids 1-32 of the Plasmodium vivax merozoite surface protein 1 (MSP1) linked to amino acids Asn1613-Ser1705 which correspond to the 19 kD C-terminal fragment (p19) of MSP-1 from Plasmodium falciparum. p19 is the C-terminal fragment of the 42 kD MSP1 from Plasmodium species. The recombinant protein can be used for the production of anti-malarial vaccines, where the p19 fragment provides a high level of protective immunity since it includes epitopes not presented in the p42 fragment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chimeric
Chimeric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Region
                                                                                                                                                                                                                                                                                                                                                                                              Recombinant protein containing Plasmodium merozoite surface protein-1 p42 fragment - useful in antimalarial vaccines, a antibodies for diagnosis and protein purification
                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                    Disclosure; Fig 1C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1997-425034/39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Roth C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Barnwell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (INSP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-FEB-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-FEB-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-AUG-1997.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO9730159-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UYNY )
                                                                                                                                           Local
                               346
                                                                                              286
                                                              35
95
                                                                                                                            92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INST
                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW22592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ä,
                                                                            NISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . .
                KCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                              NISQHQCVKKQCPENSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADA
KCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                           127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Plasmodium vivax.
Plasmodium falciparum.
                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NEW YORK STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PASTEUR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Longacre-Andre
                                                                                                                                                                                         A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          96FR-0001821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97WO-FR00291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note-
33..34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   35..127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note=
                                                                                                                                                                                                                                                                                                                                                                    85pp; French.
                                                                                                                                           26.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "signal peptide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "derived from P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "mature protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   encoded by create the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             fragment of MSP1"
                                                                                                                          1;
                                                                                                                          Score 539; DB Pred. No. 1.6e 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  from P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mendis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                restriction enzyme chimeric sequence"
                                                                                                                     DB 18; 1
1.6e-30;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   vivax MSP1"
127
                               378
                                                                                                                                                          Length 127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence
                                                                                                                                                                                                                                                                                                                                                                                                                  also
                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    p19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  used
                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ç
                                                              94
```

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0n:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Issued_Patents_AA:*
1: /cgn2_6/ptodata/1,
2: /cgn2_6/ptodata/1,
3: /cgn2_6/ptodata/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         June 11, 2003, 16:03:10; Search time 27 Seconds (without alignments) 418.459 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-500-376-8
2063
1 MWSWKCLLFWAVLVTATLCT......KPDSYPLFDGIFCSHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         262574 seqs, 29422922 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/BCTUS_COMB.pep:*
/cgn2_6/ptodata/1/iaa/backfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
   US-08-195-705-5
US-08-195-705-3
US-08-195-705-4
US-08-195-705-4
US-08-290-919-3
US-08-290-919-1
US-08-290-919-1
US-08-290-919-1
US-08-290-919-1
US-07-640-029-1
US-07-640-029-2
US-08-166-717D-6
US-07-97-133-1
US-07-97-133-1
US-07-97-133-1
US-07-97-133-1
US-08-451-8078-4
US-08-451-8078-4
US-08-451-8078-7
US-08-451-9448-3
US-08-441-9448-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Description
                                                                                               Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                              Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
Sequence
Sequence
                                       Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 5,
                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
12, Appl
1, Appl
2, Appl
4, Appl
11, Appl
11, Appl
11, Appl
11, Appl
12, Appl
13, Appl
14, Appl
15, Appl
16, Appl
17, Appl
18, Appl
19, Ap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3,
12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5, Appli
3, Appli
2, Appli
4, Appli
4, Appli
```

	45	44	43	42	4.1	40	39	38	37	36	35	34	ω ω	32	31	30	29	28
	124.5	126	126	126	128	128	128	129	129	129	129	129	129	129	129	131	132.5	132.5
	6.0	6.1	6.1	6.1	6.2	6.2	6.2	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.4	6.4
	1038	729	300	300	731	731	731	733	733	733	733	302	302	302	302	520	455	455
	4	Н	4	ب	4	بر	_	4	ب	-	_	4	1	1	_	4	Ŋ	N
	US-09-541-782-4	US-07-640-029-3	US-08-439-992A-5	US-07-640-029-5	US-08-439-992A-3	US-08-441-944A-5	US-07-921-807B-5	US-08-439-992A-4	US-08-441-944A-6	US-07-921-807B-6	US-07-640-029-4	US-08-439-992A-6	US-08-441-944A-8	US-07-921-807B-8	US-07-640-029-6	US-09-752-165-1	US-08-645-193B-23	US-08-466-961A-21
•	Sequence 4, Appli	Sequence 3, Appli	Sequence 5, Appli	Sequence 5, Appli	Sequence 3, Appli	Ŋ	Sequence 5, Appli	4	δ,	Sequence 6, Appli	4	0	Sequence 8, Appli	Sequence 8, Appli	σ,	1, 2	23,	Sequence 21, Appl

ALIGNMENTS

RESULT 1 US-08-195-705-5 TELEPHONE: 212-757-2200 TELEPAX: 212-86-1461 INFORMATION FOR SEQ ID NO: 5: SEQUENCE CHARACTERISTICS: LENGTH: 377 amino acids TYPE: amino acid Sequence 5, Application Patent No. 6420523 ATTORNEY/AGENT INFORMATION: NAME: Jacobs, Seth H REGISTRATION NUMBER: 32140 REFERENCE/DOCKET NUMBER: 1188 TELECOMMUNICATION INFORMATION: TELEPHONE: 212-757-2200 GENERAL INFORMATION: APPLICANT: Chang, Sandra APPLICANT: Hui, George APPLICANT: Barr, Philip COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA: FRAGMENT TYPE: ORIGINAL SOURCE: COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk HYPOTHETICAL: MOLECULE TYPE: NUMBER OF SEQUENCES: 5 APPLICANT: G1bson, Helen TITLE OF INVENTION: BACULOVIRUS PRODUCED TITLE OF INVENTION: FALCIPARUM VACCINE STREET: 45 Rock CITY: New York STATE: N.Y. ORGANISM: P STRAIN: WEL TOPOLOGY: STRANDEDNESS: single CLASSIFICATION: APPLICATION NUMBER: US/08/195,705 FILING DATE: 14-FEB-1994 COUNTRY: ADDRESSEE: 10111 N.Y. E: Davis Hoxie Faithfull Hapgood 45 Rockefeller Pl. Plasmodium falciparum linear C-terminal peptide us/08195705 11880A3 PLASMODIUM

Query Match

83.3%; Score 1719.5;

DB 4;

Length 377;

60 83

N

263

238

```
US-08-195-705-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3 Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity Matches 331; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Chang, Sandra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Hui, George
APPLICANT: Barr, Philip
APPLICANT: Gibson, Helen
TITLE OF INVENTION: BACULA
TITLE OF INVENTION: FALCH
                                                                                                                                                                 TELEFAX: 212-586-1461
NFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                  SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION: 212-757-2200
                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
NAME: Jacobs, Seth H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
   ORIGINAL
                       FRAGMENT
                                      HYPOTHETICAL:
                                                       MOLECULE TYPE:
                                                                                                                                                                                                                                                                REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08/195,705
FILING DATE: 14-FEB-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 10111
                                                                           TOPOLOGY:
                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                      CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET:
                                                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84 NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKV 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRE 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEAKV 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AVTTSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRE
                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N.Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Application
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDCYPLFDGIFCS 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VFENLARTVLSNLLDGNL-QGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQE 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VFENLLKSVLSNLLDWKLARYVKHFTTPMRKKTMIQQSSGCFRHLDEREECKCLLNYKQE
                                                                                                                     375 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             E: Davis Hoxie Faithfull Hapgood 45 Rockefeller Pl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                       212-586-1461
                                . peptide
                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Floppy disk
                       C-terminal
                                                                                          single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BACULOVIRUS PRODUCED PLASMODIUM FALCIPARUM VACCINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     us/08195705
                                                                                                                                                                                                                                                              32140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6,
                                                                                                                                                                                                                                              11880A3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 1.1e-121;
6; Mismatches 18;
                                                                                                                                                                                                                                                                                                                                                                                               #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ļ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 3
US-08-195-705-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; ORGANISM: ; STRAIN: F
US-08-195-705-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORM
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                    TELEPHONE: 212-757-220
TELEFAX: 212-586-1461
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS
                                                                                                                                                FILING DATE: 14-FEB-1994
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jacobs, Seth H
REGISTRATION NUMBER: 32140
REFERENCE/DOCKET NUMBER: 1
                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compati
                                                                                                             TELECOMMUNICATION INFORMATION: TELEPHONE: 212-757-2200
                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Gibson, Helen
TITLE OF INVENTION: BACULOVIRUS PRODUCED PLASMODIUM
TITLE OF INVENTION: FALCIPARUM VACCINE
NUMBER OF SEQUENCES: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
TYPE: amino STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity 90.7
les 323; Conservative
                                                                                                                                                                                                                                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                    OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                STATE: N.Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                  LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2, 642052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            264 VFENLAKTVLSNLLDGNL-QGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQE 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       204 LNYTYEKSNYEYKIKELNYLKTIQDKLADFKKNNNFYGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             144 GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKV 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         323 GDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181 LNYTYEKSNYE--IKELIYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEAKV 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 NFKNYLESDLIPYKDLTSSNYVYKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84 NFKNYLESDLIPYKDLTSSNYVYKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24 AVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSFIKKRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 AVTPSVIHNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSPFNKRE
                                                                                                                                                                                                                                                                                                                                                                                               10111
                                                                                                                                                                                                                                                                                                                                                                                                                                                   New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GSKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCQCTKPDSYPLSMVIFCS
                   amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VFENLLKSILSNLLDWKLARYVKHFTTPMRKKTMIQQNSGCFRHLDEREECKCLLNYKQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Application US/08195705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>Σ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E: Davis Hoxie Faithfull Hapgood 45 Rockefeller Pl.
                                    394 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hui, George
Barr, Philip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chang, Sandra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                   compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80.4%;
                                                                                                                                                                                                                                                                                                                      PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                US/08/195,705
                                                                                                                                                                   32140
                                                                                                                                                    11880A3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 1658.5; DB 4
Pred. No. 4.4e-117;
7; Mismatches 23;
                                                                                                                                                                                                                                                                                                   Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 4;
                                                                                                                                                                                                                                                                                                    #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       375;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       354
```

õ 밁 Ş 밁 δÃ 밁 Ϋ́ 밁 Ş 밁

밁

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; STRAIN:
US-08-195-705-2
                                                                                                                                                                                                                                                                                                                                                                                                        US-08-195-705-4
                                                                                                                                                                                                                                                                                                                                                        Sequence 4, Application US/08195705
Patent No. 6420523
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                          MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FRAGMENT TYPE: C-terminal ORIGINAL SOURCE:
ATTORNEY/AGENT INFORMATION:
NAME: Jacobs, Seth H
                                                                   CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HYPOTHETICAL: NATI-SENSE: NO
                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                       TITLE OF INVENTION: BACULOVIRUS PRODUCED PLASMODIUM TITLE OF INVENTION: FALCIPARUM VACCINE
                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE: peptide HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                      APPLICANT:
                         FILING DATE: 14
CLASSIFICATION:
                                                                                              COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                               STREET: 45 Rocl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Plasmodium rarcapuscum
ORGANISM: falciparum uganda palo alto (FUP)
                                                                                                                                                                    STATE: N.Y.
COUNTRY: USA
                                                       APPLICATION NUMBER:
                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          126 LAKYKDDLESIKKVIKEEKEKFPSSPPTTPPSPAKTDEQKKESKFLPFLTNIETLYNNLV 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PLFDGIFCS 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REECKCLLNYKQEGDKCYENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVLGYYKIL 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                              PLFDGIFCS 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENSGCFRHLDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNHNDFEAIKKLINDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEKYKSDLDSIKKYI-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ESDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQEGISYYEKV
                                                                                                                                                                                                                                                                                                               Chang, Sandra
Hui, George
Barr, Philip
                                                                                                                                                                                                                                                                                                Gibson, Helen
                                                                                                                                                                                                                45 Rockefeller
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                  PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                             Davis Hoxie Faithfull Hapgood
                                        14-FEB-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               57.8%;
                                                       us/08/195,705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1191.5; DB 4;
Pred. No. 5.6e-82;
i4; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----NDKQGENEKYLPFLNNIETLYKTVN 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               394;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            65
```

```
RESULT 5
US-08-290-919-3
                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; STRAIN:
US-08-195-705-4
                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                          Sequence 3, Patent No. !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: HOLDER,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 212-586-1461
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
ZIP: 2000 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE IBM PC Compatible
                                                                                                                                                      APPLICANT: BLACKMAN, MICHAEL J.
APPLICANT: CHAPPEL, JONATHAN A.
TITLE OF INVENTION: IMPROVEMENTS
TITLE OF INVENTION: VACCINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FRAGMENT TYPE:
ORIGINAL SOURCE:
ORGANISM: Pla
                                                                                                                              NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION: TELEPHONE: 212-757-2200
                                                COUNTRY:
ZIP: 200
                                                                          STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER:
                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                                                                                     368
                                                                                                                                                                                                                                                                                                                                                                                  303
                                                                                                                                                                                                                                                                                                                                                                                                             308
                                                                                                                                                                                                                                                                                                                                                                                                                                       246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   126
                                                                                                                                                                                                                                                                                                                            363
                                                                                                                                                                                                                                                                                                                                                                                                                                                    250 NHNNLLTKFLSTGMV--FENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHL 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   219;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         90
                                               20005-3918
                                                                                         WASHINGTON
                                                                                                                                                                                                                                           , Application US/08290919 5720959
                                                                                                                                                                                                                                                                                                                          SYPLEDGIECS 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                      TKKDMLGKLLSTGLVQIFPN---TIISKLIEGKFQDMLNISQHQCVKKQCPENSGCFRHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HKIDLFVIHLEARVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDY 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LAKYKDDLESIKKVIKEEKEKFPSSPPTTPPSPAKTDEQKKESKFLPFLTNIETLYNNLV 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEKYKSDLDSIKKYI----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ESDLMQFKHISSNEYIIEDSFKLLNSEQKNILLKSYKYIKESVENDIKFAQEGISYYEKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ESDLIPYKDLTSSNYVYKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDYLGYYKIL
                                                                          D.C.
                                                                                                                                                                                                                                                                                                                                                                                 DEREECKCLLNYKQEGDKCEENPNPTCNENNGGCDADATCTEEDSGSSRKKITCECTKPD
                                                                                                                                                                                                                                                                                                                                                                                                         DEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNTNDFEAIKKLINDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MAD
                                                                                                       1100 NEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             394 amino acids
                                                                                                                                                                                                                 HOLDER,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Plasmodium falciparum
                                                                                                   CUSHMAN DARBY & CUSHMAN, 00 NEW YORK AVENUE, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  single
                                                                                                                                                                                                                 ANTHONY A.
                                                                                                                                              VACCINE
19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                56.1%;
59.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           32140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1156.5; DB 4;
Pred. No. 2.4e-79;
''' wismatches 73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11880A3
                                                                                                                                                                      IN OR RELATING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----NDKQGENEKYLPFLNNIETLYKTVN 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 4;
                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                         MALARIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            394;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      89
                                                                                                                                                                                                                                                                                                                                                                                                                                      302
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-290-919-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                σs-08-290-919-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NFORMATION FOR SEQ ID NO:
                                                     CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/290,919
FILING DATE: 04-OCT-1994
                                                                                                                                                                             COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 53 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REGISTRATION NUMBER: 16,773
REFERENCE/DOCKET NUMBER: 21
TELECOMMUNICATION INFORMATION:
                              PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 22-FEB-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                               UMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                 ITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                 PPLICANT:
                                                                                                                           MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: GB 9203821.5
FILING DATE: 22-FEB-1992
RIOR APPLICATION DATA:
                                                                                                             SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION: /label= x OTHER INFORMATION: /note= "X = M and N, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (202) 822-0944
TELEX: 6714627 CUSH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 04
CLASSIFICATION:
                                              CLASSIFICATION:
                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM: I
SOFTWARE: Patentin
               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                             NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  330 PNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               49;
                                                                                                                                                                                                  E: D.C.
TRY: U.S.A.
20005-3918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N
                                                                                                                                                                                                                                                WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                 2, Application US/08290919
5720959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KOKULIS, PAUL N.
                                                                                                                                                                                                                                                              1100 NEW YORK AVENUE,
                                                                                                                                                                                                                                                                                                                                                              CHAPPEL, JONATHAN A.
                                                                                                                                                                                                                                                                                                                                                                             BLACKMAN, MICHAEL J.
                                                                                                                                                                                                                                                                                                                                                                                                  HOLDER,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ss: single
linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (202) 861-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein
MBER: GB 9203821.5
22-FEB-1992
                                                                                                                                                                                                                                                                                                                                                                                                ANTHONY A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PC-DOS/MS-DOS
In Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13.9%; Score 287; DB 1; 100.0%; Pred. No. 3.8e-15;
                                                                                                                                                                                                                                                                                                                                              IMPROVEMENTS IN OR RELATING TO MALARIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PCT/GB93/00367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           us/08/290,919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               w
•••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          212242/HCM/MJL/6BC8/
                                                                                                                                                                                                                                                                             CUSHMAN, L.L.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
```

```
δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-290-919-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-290-919-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity Matches 48; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
TELEX: 6714627 CUSH INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: KOKULIS, PAUL N.
                                                                    TELECOMMUNICATION INFORMATION:
                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/(
FILING DATE: 22-FEB-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9:
FILING DATE: 22-FEB-1992
                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS
LENGTH: 48 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE:
                                  TELEFAX:
                                                  TELEPHONE:
                                                                                      REGISTRATION NUMBER: 16
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/290,919 FILING DATE: 04-OCT-1994
                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY: U.S.A. ZIP: 20005-3918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 1100 NEW CITY: WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER: 16,773
REFERENCE/DOCKET NUMBER: 212242/HCM/MJL/6BC8/
                                                                                                                                                                                                                                                               CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                   SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  286 NISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPT 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 NISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPT 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : 48 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               K: (202) 822-
6714627 CUSH
                                                                                                                    KOKULIS, PAUL N
                                                                                                                                                                                                                                                                                                                                                                                                                                                        D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Application US/08290919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1100 NEW YORK AVENUE, N.W.
                                   (202)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLACKMAN, MICHAEL J. CHAPPEL, JONATHAN A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HOLDER, ANTHONY A.
                                                                                                                                                                                                                                                                                                                                PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                  (202) 861-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (202) 861-3000
                                                                                                                                                                                                                                                                                                                                                                                  Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         single
                                  822-0944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               822-0944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13.6%; Score 280; DB 1; 100.0%; Pred. No. 1.1e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IMPROVEMENTS IN OR RELATING TO MALARIA
                                                                                                                                                                                                                             GB 9203821.5
                                                                                                                                                                          PCT/GB93/00367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PCT/GB93/00367
                                                                                                    16,773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12:
                                                                                    212242/HCM/MJI/6BC8/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 us-08-290-919-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-290-919-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                     TELEX: 6714627 CUSH INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                         TYPE: amino acid
STRANDEDNESS: Single
TOPOLOGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 435
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9203821.5
APPLICATION NUMBER: 22-FEB-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: FLOPPY disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OPERATION CONTROL OF THE CONTROL OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 21
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 861-3000
                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: protein
                                                                                                                                                           OLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: PCT/
FILING DATE: 22-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION: /label= x OTHER INFORMATION: /note= "X = M and N, or
                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: FILING DATE: 04-OC
   OTHER INFORMATION: OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION:
                                                                                                   NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY:
                                                           OCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          287 ISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPT 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 ISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPT 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RY: U.S.A.
20005-3918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/08290919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KOKULIS, PAUL N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E: CUSHMAN DARBY & CUSHMAN, L.L.P. 1100 NEW YORK AVENUE, N.W.
                                                                                                                                                                  single
linear
                                                                                                                                                                                                                                                                                                                                                                                                                    (202) 822-0944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAPPEL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BLACKMAN, MICHAEL J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Modified-site
                                                                                                Modified-site
                                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ANTHONY A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JONATHAN A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IMPROVEMENTS IN OR RELATING TO MALARIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Release #1.0, Version #1.25
/label- X
/note- "X - M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCT/GB93/00367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16,773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 274;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              212242/HCM/MJL/6BC8/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
   and N,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3.2e-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-290-919-2
                                                                                                             US-08-290-919-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-290-919-4
                                                                              Query Match
                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                   TELEFAX: (202) 822-0944
TELEX: 6714627 CUSH
INFORMATION FOR SEQ ID NO: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: 21
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 22-FEB-1993
ATTORNEY/AGENT INFORMATION:
NAME: KOKULIS, PAUL N.
REGISTRATION NUMBER: 16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: GB 9203821.5
                                                                                                                                                                                            FEATURE:
                                                                                                                                                                                                        MOLECULE TYPE:
                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 22-FEB-1992 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                          NAME/KEY: Modified-site LOCATION: 1
OTHER INFORMATION: /labs
                                                               Local Similarity
                                                                                                                                                                                                                                   LENGTH: 53 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: FILING DATE: 22-FE
                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 04-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
330 PNPTCNENNGGCDADARCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      287 ISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPT 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20005-3918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         , Application 5720959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ISQHQCVKKQCPENSGCFRHLDEREECKCLLNYKQEGDKCVENPNPT 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3: CUSHMAN DARBY & CUSHMAN, L.L.P. 1100 NEW YORK AVENUE, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BLACKMAN, MICHAEL J.
                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HOLDER, ANTHONY A.
                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                     (202) 861-3000
                                                                                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13.1%; 97.9%;
                                                              13.0%;
93.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JONATHAN A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US/08290919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IMPROVEMENTS
                                                                                                                          /label= X
/note= "X = M and N, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        us/08/290,919
                                                                                                                                                                                                                                                                                                                                                                                                                                                             PCT/GB93/00367
                                                                                                                                                                                                                                                                                                                                                                                            16,773

    Mismatches

                                                                                                                                                                                                                                                                                                                                                                                212242/HCM/MJL/6BC8/
                                                              Score 268;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 271; DB 1;
Pred. No. 5.4e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IN OR RELATING TO MALARIA
                                                            1e-13;
                                                                             DB 1;
                                               2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 48;
                                                                           Length 53;
                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                             0
```

밁

```
RESULT 11
US-07-640-029-1
                                                                                                                                                                        밁
                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                        ; MOLECULE TYPE: protein US-08-290-919-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 10
US-08-290-919-11
                                                                 Sequence 1, Application Patent No. 5229501
                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patent No. 5720959
 GENERAL INFORMATION:
APPLICANT: Kiefer
APPLICANT: Valenzo
APPLICANT: Barr, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OPERATION SYSTEM: PC-DOS/MS-DUS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/290,919
FILING DATE: 04-CCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 22-FEB-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 22-FEB-1992 PRIOR APPLICATION DATA: APPLICATION NUMBER: PCT/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION: TELEPHONE: (202) 861-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: BLACKMAN, MICHAEL J.
ARPLICANT: CHAPPEL, JONATHAN A.
BITLE OF INVENTION: IMPROVEMENT.
BITLE OF INVENTION: VACCINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 21
LECOMMUNICATION TIPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET: 1100 NEW CITY: WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: KOKULIS, PAUL N. REGISTRATION NUMBER: 1
                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ENGTH:
                                                                                                                                                                                              334 CNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
                                                                                                                                                                                                                                                                   277 LDGNLQGMLNIS-QHQCV-KKQCPQNSGCFRHLDEREECKCLLNYKQ-EGDKCVENPNPT 333
                                                                                                                                                                        59
                                                                                                                                                                                                                                                                                                          49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RY: U.S.A.
20005-3918
                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                             amino acid
                                                                                                                                                                    CDINNGGCDPTASCQNAESTENSKKIICTCKEPTPNAYYEGVFCS 103
                                                                                                                                                                                                                                       MDG--MDLLGVDPKHVCVDTRDIPKNAGCFRDDNGTEEWRCLLGYKKGEGNTCVENNNPT 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           106 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1100 NEW YORK AVENUE, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (202)
Valenzuela, I
Barr, Philip
                                 Kiefer, Michael C.
                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HOLDER, ANTHONY A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3: Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CUSHMAN DARBY & CUSHMAN, L.L.P.
                                                                                                                                                                                                                                                                                                                                                                                                                            single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                822-0944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CUSH
                                                                                                                                                                                                                                                                                                                         12.3%;
                                                                                   US/07640029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IMPROVEMENTS IN OR RELATING TO MALARIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PCT/GB93/00367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GB 9203821.5
 Pablo D.T
p J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11:
                                                                                                                                                                                                                                                                                                          17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                212242/HCM/MJL/6BC8/
                                                                                                                                                                                                                                                                                                       Score 253.5; DB 1; Pred. No. 3.1e-12; 7; Mismatches 34;
                                                                                                                                                                                                                                                                                                                                       Length 106;
                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                         5;
```

```
US-09-134-001C-4669
                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                     RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; MOLECULE TYPE:
US-07-640-029-1
GENERAL INFORMATION:
APPLICANT: LYNN DOUCETTE-Stamm et al
APPLICANT: LYNN DOUCETTE ACID AND AMINO ACID SEQUENCES RELATING TO STAPHYLOCOCC
TITLE OF INVENTION: EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Loc
Matches
                                                                            Sequence 4669; Application US/09134001C Patent No. 6380370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: 510-655-3542
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION: TELEPHONE: 510-601-2708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: McClung, Barbara G
REGISTRATION NUMBER: 33,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: UFILING DATE: 19910111 CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                              173 KYLPFLNNIETLYKTVNHKIDLFVIH-----LEAKV-LNYTYE-KSNVEVKIK----
                                                                                                                                                                                                                                                                                                                                                                                             123
                                                                                                                                                                                                                                    219 --ELNYLKTIQ 227
                                                                                                                                                                                                                                                                                                                                                       178 KCPSSGTPNPTLRWLKNGKE----FKPDHRIGGYKVRYATWSIIMDSV---VPSDKGN--
                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    74 ILNSRENKRENEKNVLESDLIPYKDLTSSNYVVKDPYKELNKEKRDKFL------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 VQSINWLRDGVQLAESNRTRITGEEVEVQDSVPADSGLYACVTSSPSGSDTTYFSVNVSD 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      77; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Emeryville
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MWSWKCLLFWAVLVTATLCTAGAAVT------PSVIDNIL-----
                                                                                                                                                                                             QPHIQWLKHIE 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MWSWKCLLFWAVLVTATLCTARPSPTLPEQAQPWGAPVEVESFLVHPGDLLQLRCRLRDD 60
                                                                                                                                                                                                                                                                                                                                                                                                                                  ALPSSEDDDDDDDSSSEEKKEKETDNTKPNPVA--PY-WTSPEKMEKKLHAVPAAKTVKF 177
                                                                                                                                                                                                                                                                          ----YTCIVENEYGSINHTYQLDVVERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDP 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4560 Horton Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chiron Corporation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     single
                                                                                                                                                                                                                                                                                                                                                                                         -SSYNYIKDSIDTDINFAND-VLGYYKILSEKYKSDLDSIKKYINDKQGENE 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Growth Factor Receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7.0%; Score 144; DB 1; Length 816; 24.8%; Pred. No. 0.0071; tive 40; Mismatches 94; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Expression and Use of Human Fibroblast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US/07/640,029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               33,113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -SKIE-NEYEVLYLKPL-AGVYRSLKKQLENNVMT-FNVNVKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CH-165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100;
                                                                                                                                                                                                                                                                                                                218
                                                                                                                                                                                                                                                                                                                                                   228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             34
```

16;

```
멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 13
US-07-640-029-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-134-001C-4669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application US/07640029 Patent No. 5229501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 5674
SEQ ID NO 4669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
INFORMATION FOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: US 60/064,964
PRIOR FILING DATE: 1997-11-08
PRIOR APPLICATION NUMBER: US 60/055,779
PRIOR FILING DATE: 1997-08-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/134,001C CURRENT FILING DATE: 1998-08-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Staphylococcus epidermidis
                             NAME: MCClung, Barbara G.
REGISTRATION NUMBER: 33,113
REFERENCE/DOCKET NUMBER: CH-165
TELECOMMUNICATION INFORMATION:
TELEPHONE: 510-601-2708
                                                                                                                                                                                          CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                           COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                    ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: Expression and Use of Human Fibroblast
                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                       CLASSIFICATION:
                                                                                                                                                   APPLICATION NUMBER: US
FILING DATE: 19910111
                                                                                                                                                                                                      COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POCST
                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  142 VLGYYKILSEKYKSDLDSIKKYIND-----KQGENEKYLPFLNNIET--LYKTVNHKIDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      255 LTKFLSTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   42 VRYLKYLDSVKKSL----NTKKTYAYALK-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43 VLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRENFKNVLESDLIPYKDLTSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 384
                                                                                                                                                                                                                                                                                                  94608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                   Emeryville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --TYLKTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FLIQL-----LYETG---LRIGEVLSLR-IDDIKFDFRKGHQIV----LKNRFNDNG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FMHMESKYSKKYKSFMHHINKDYRTLKNILKVKEPKKKIEVLTNAEVKKLLEEANNIRDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NEVDFIRMMKTPFEYENVLSYHRKEKSISPKTINLTMTVVSNFYDYLYRSKKLDVNF-YD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NYV----VKDPYKF---LNKEKRDKFLSS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNL
                                                                                                                                                                                                                                                                                                                                 California
                                                                                                                                                                                                                                                                                                                                                                   4560 Horton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Barr, Philip J.
                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Valenzuela, Pablo D.T.
                  510-655-3542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kiefer, Michael C.
SEQ
                                                                                                                                                                                                                                                                                                                                                                                      Chiron Corporation
                                                                                                                                                                                                                                                           Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6.9%;
                                                                                                                                                                       us/07/640,029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 141.5; DB Pred. No. 0.0042;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 4;
                                                                                                                                                                                                          #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----YNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NEFVYLESKKICYKEVSFD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                144
```

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-166-717D-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No. 5789182
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
COMPUTER: IBM COMPATIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acids
AMINO ACID
STRANDEDNESS: 810--
TOPOLOGY.
                                                                                            CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 817 amino acid
                                                                                                                                                               SOFTWARE: WordPerfect (Version 7.0)
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE:
                              ATTORNEY/AGENT INFORMATION:
NAME: Kristina Bieker-Brady
                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                          COMPUTER: IBM CON
OPERATING SYSTEM:
REFERENCE/DOCKET NUMBER: 00
                  REGISTRATION NUMBER:
                                                                 APPLICATION NUMBER: 0' FILING DATE: 12/20/90
                                                                                                                            APPLICATION NUMBER: US
FILING DATE: 12/14/93
                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  284 OPHIQWLKHIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 219 -- ELNYLKTIQ 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               74 ILNSRENKRENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFL------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 VQSINWLRDGVQLAESNRTRITGEEVEVQDSVPADSGLYACVTSSPSGSDTTYFSVNVSD 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MWSWKCLLFWAVLVTATLCTARPSPTLPEQAQPWGAPVEVESFLVHPGDLLQLRCRLRDD
                                                                                                                                                                                                                                                                    02110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  , Application US/08166717D 5789182
                                                                                                                                                                                                                                                                                                                   Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MWSWKCLLFWAVLVTATLCTAGAAVT------PSVIDNIL-----------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KYLPFLNNIETLYKTVNHKIDLFVIH-----LEAKV-LNYTYE-KSNVEVKIK-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KCPSSGTPNPTLRWLKNGKE----FKPDHRIGGYKVRYATWSIIMDSV---VPSDKGN--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ALPSSEDDDDDDDSSSEE---KETDNTKPNRMPVAPY-WTSPEKMEKKLHAVPAAKTVKF 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----YTCIVENEYGSINHTYQLDVVERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----SSYNYIKDSIDTDINFAND-VLGYYKILSEKYKSDLDSIKKYINDKQGENE 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----SKIE-NEYEVLYLKPL-AGVYRSLKKOLENNVMT-FNVNVKD
                                                                                                                                                                                                                                                                                                 Massachusetts
                                                                                                                                                                                                                                                                                                                               176 Federal Street
                                                                                                                                                                                                                                                                                U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Leder, Philip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Klagsbrun, Michael
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ornitz, David M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                    Clark
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             peptide
                                                                                                                                                                                                                                                                                                                                                                                                TO A HEPARIN-BINDING FACTOR RECEPTOR
                                                                                                                                                                                                                                                                                                                                                 & Elbing LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6.9%; Score 141.5; DB 24.4%; Pred. No. 0.011;
                                                                                                                                                                                                   WINDOWS 95
                                                                                                                                                                                                                                                                                                                                                                                                                               SYSTEM FOR ASSAYING BINDING
                                                                                07/631,717
                                                                                                                                                 US/08/166,717D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                41;
 00383/017002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                GROWTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                817;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
```

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        덩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 15
US-07-997-133-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-166-717D-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tent No.
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/642,755
FILING DATE: 18-JAN-1991
                                                                     SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/997,133
FILING DATE: 28-DEC-1992
                                                                                                                                                                                            COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFORMUNICATION INFORMATION: TELEPHONE: (617) 723-4123
TELEFAX: (617) 723-8962
                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Extracellular roun - TITLE OF INVENTION: Fibroblast Growth Factor Receptor
                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                            PPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             PPLICANT:
                                                                                                             MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                            CITY: Arlington
STATE: Virginia
ZIP: 22202
                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          175 KCPSSGTPNPTLRWLKNGKE----FKPDHRIGGYKVRYATWSIIMDSV---VPSDKGN-- 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    282 XPHIQWLKHIE 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             74 ILNSRFNKRENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFL------ 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MWGWKCLLFWAVLVTATLCTARPAPTLPEQAQPWGVPVEVESLLVHPGDLLQLRCRLRDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MWSWKCLLFWAVLVTATLCTAGAAVT-----PSVIDNIL------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/07997133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ALPSSEDDDDDHDSSSEE----KETDNTKPNPVA--PY-WTSPEKMEKKLHRVPAAKTVKF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VQSINWXXDGVQLVESNRTRITGEEVEVRDSIPADSGLYACVTSSPSGSDTTYFSVNVSD 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     --ELNYLKTIQ 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----YTCIVENEYGSINHTYQLDVVERSPHRPILQAGLXANKTVALGSNVEFMCKVYSDX 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KYLPFLNNIETLYKTVNHKIDLFVIH------LEAKV-LNYTYE-KSNVEVKIK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----SKIEN-----EYEVLYLKPL-AGVYRSLKKQLENNVMT-FNVNVKD
                                                                                                                                                                                                                                                                 1755 Jefferson Davis Highway, Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                           Mazue, Guy
                                                                                                                                                                                                                                                                                                                                                   Sarmientos, Paolo
/ENTION: Extracellular Form of the Human
                                                                                                                                                                                                                                                                                                                                                                                                      Isacchi, Antonella
Roncucci, Romeo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bergonzoni, Laura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                  OBLON, SPIVAK, McCLELLAND,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -SSYNYIKDSIDTDINFAND-VLGYYKILSEKYKSDLDSIKKYINDKQGENE 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 141.5; DB Pred. No. 0.011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                    MAIER & NEUSTADT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels 103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 820;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34
```

```
. Q
                                                                          밁
                                                                                                            Š
                                                                                                                                                    밁
                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; MOLECULE TYPE: US-07-997-133-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: (703)486-234
TELEX: 248855 OPAT UR
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 822 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER: .
                                                                                                                173
                                    219 --ELNYLKTIQ 227
                                                                          228 ----YTCIVENEYGSINHTYQLDVVERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDP 283
                                                                                                                                                    177 KCPSSGTPNPTLRWLKNGKE----FKPDHRIGGYKVRYATWSIIMDSV---VPSDKGN--
                                                                                                                                                                                                                               121 ALPSSEDDDDDDDSSSEE----KETDNTKPNRMPVAPY-WTSPEKMEKKLHAVPAAKTVKF 176
284 QPHIQWLKHIE
                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                             35
                                                                                                                                                                                                                                                                   74 ILNSRFNKRENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFL------ 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                              76;
                                                                                                                                                                                                                                                                                                                                                                                  1 MWSWKCLLFWAVLVTATLCTARPSPTLPEQAQPWGAPVEVESFLVHPGDLLQLRCRLRDD 60
                                                                                                                                                                                                                                                                                                                                                                                                                      1 MWSWKCLLFWAVLVTATLCTAGAAVT------PSVIDNIL------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Oblon, No. 5288855man
                                                                                                                                                                                                                                                                                                       VQSINWLRDGVQLAETNRTRITGEEVEVQDSVPADSGLYACVTSSPSGSDTTYFSVNVSD 120
                                                                                                                                                                                       ------SSYNYIKDSIDTDINFAND-VLGYYKILSEKYKSDLDSIKKYINDKQGENE 172
                                                                                                              KYLPFLNNIETLYKTVNHKIDLFVIH-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (703)521-4500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6.9%; Score 141.5; DB 24.4%; Pred. No. 0.011;
                                                                                                                                                                                                                                                                                                                                           ------SKIE-NEYEVLYLKPL-AGVYRSLKKQLENNVMT-FNVNVKD 73
294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24,618
                                                                                                                                                                                                                                                                                                                                                                                                                                                              41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      769-226-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          '되
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                              -LEAKV-LNYTYE-KSNVEVKIK-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            93; Indels 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
```

227

218

Search completed: June 11, 2003, 16:09:49 Job time: 29 secs

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                욙
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein -
                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      on
                                                                                                                                                                                                                                                                                                                                                          Pred. No.
score grea
and is der
                                                                                                                                                          1874
1719.5
1658.5
1347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB DB
  1347
1310
1198.5
1197.5
1161.5
1156.5
742.5
738.5
676
542
                                                                                                                                                                                                                                                                                         Score
                                                                                                                                                                                                                               2063
1879
1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq
                                                                                                                                                                                                                                                                                                                                                         No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                       Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     June 11, 2003, 16:06:00 ; Search time 22 Seconds (without alignments) 1802.012 Million cell updates/sec
                                                                                                                                                                                                                                                             100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               us-09-500-376-8
2063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            392085 segs, 103240269 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapop 10.0 , Gapext 0.5
  Published_Applications_AA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US08_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US09_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US09_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MWSWKCLLFWAVLVTATLCT.....KPDSYPLFDGIFCSHHHHHH 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cgn2_6/ptodata/1/pubpaa/US08_NEW_PUB.pep:
                                                                                                                                                                                                                                                                                                                                                                                                                              /cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                  /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep:*
  384
1639
376
376
402
394
394
394
394
397
397
397
397
                                                                                                                                                                                                                                                                                         DB
                                                           000000000
US-10-062-809-8
US-10-087-464-11
US-10-087-464-10
US-10-087-464-34
US-10-087-464-34
US-10-082-809-5
US-10-082-809-1
US-10-082-809-1
US-10-082-809-1
US-10-082-809-1
US-10-082-809-1
US-10-082-809-1
US-10-082-809-2
US-10-082-809-3
US-10-083-31-3
US-09-134-333-13
US-09-134-333-13
US-09-134-333-13
                                                                                                                                                                                                                                                                                       Ħ
                                                                                                                                                                                                                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 392085
                                                  Sequence 8, Appli
Sequence 11, Appl
Sequence 10, Appli
Sequence 2, Appli
Sequence 34, Appli
Sequence 4, Appli
Sequence 14, Appli
Sequence 18, Appli
Sequence 18, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 3, Appli
                          Sequence 2, A
Sequence 2, A
Sequence 3, A
Sequence 13,
Sequence 12,
Sequence 12,
                                                                                                                                                                                                                                                                                     Description
              Sequence
```

;	5	44	3	42	41	40	39	38	37	36	35	34	ω ω	32	31	30	29.	28	27	26	25	24	23	22	21	20
į	120	120	120.5	120.5	120.5	120.5	121	121	121	122.5	122.5	123	123.5	124	128	128	136.5	136.5	139.5	170	426.5	539	539	539	539	542
								5.9	5.9	5.9	5.9	6.0	6.0	6.0	6.2	6.2	6.6	6.6	6.8	8.2	20.7	26.1	26.1	26.1	26.1	26.3
i d	754	621	1086	841	779	778	1431	360	334	1009	996	471	1143	358	861	497	893	461	822	1394	281	127	116	108	95	114
	٥	10	10	10	9	9	9	9	9	10	10	10	10	10	9	9	9	9	9	ø	10	10	10	10	10	9
	TS-09-908-193-32	US-09-996-620-6	US-09-924-154-15	US-09-861-451A-30	US-09-908-193-10	US-09-908-193-8	US-09-842-930A-2	US-10-087-464-12	US-10-087-464-33	US-09-815-242-12141	US-09-815-242-5251	US-09-925-302-788	US-09-924-154-14	US-09-861-451A-50	US-09-820-843A-109	US-09-820-843A-32	US-10-234-432-86	US-10-234-432-24	US-09-757-415A-2	US-09-842-930A-25	US-09-134-333-14	US-09-134-333-8	US-09-134-333-5	US-09-134-333-10	US-09-134-333-2	US-10-087-464-35
nedrence net ubbr	<u>ئ</u>	σ.	Sequence 15, Appl	e 30,	Sequence 10, Appl	Sequence 8, Appli .	Sequence 2, Appli	12	w	12141,	۳	788,	14,	e 50,	109,	•	, 88	Sequence 24, Appl	Sequence 2, Appli	25,	Sequence 14, Appl	ω	Sequence 5, Appli	10	e 2,	Sequence 35, Appl

ALIGNMENTS

RESULT 1 US-10-062-809-8

Sequence 8, Application US/10062809 Publication No. US20030100106A1

```
GENERAL INFORMATION:

APPLICANT: Chang, Sandra P.

APPLICANT: Hashimoto, Ann

APPLICANT: Nishimura, Tan1

ITILE OF INVENTION: BACULOVIRUS PRODUCED PLASMODIUM FALCIPARUM VACCINE

FILE REFERENCE: A-67984-1/RFT/TAL/NBC

CURRENT APPLICATION NUMBER: US/10/062,809

CURRENT FILING DATE: 2002-06-28

PRIOR APPLICATION NUMBER: US 09/500,376

PRIOR APPLICATION NUMBER: US 60/266,281

PRIOR APPLICATION NUMBER: US 60/266,281

PRIOR FILING DATE: 2001-02-01

NUMBER OF SED ID NOS: 79

SOFTWARE: Patentin version 3.1
                Ş
                                                                              Qy
                                                                                                                      밁
                                                                                                                                                       S
                                                                                                                                                                                         밁
                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                    ; TYPE: PRT; ORGANISM: Plasmodium falciparum US-10-062-809-8
                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 8
LENGTH: 384
                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                 Matches
                                                    121
                  181
                                                                                     121
                                                                                                                                                                                                                                                                 384;
                                                                                                                        61
                                                                                                                                                          61
                                                                                                                                                                                                             1 MWSWKCLLFWAVLVTATICTAGAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQL
                                                                                                                                                                                                                                                                                 Similarity
                                                 FLSSYNYIKDSIDTDINFANDYLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNN
                IETLYKTVNHKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFV
                                                                                                                                        ENNYMTENYNVKDILNSRENKRENFKNYLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDK 120
                                                                                                                      ENNVMTFNVNVKDILNSRFNKRENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDK
                                                                                                                                                                                         MWSWRCLLFWAVLVTATLCTAGAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQL
Conservative
                                                                                                                                                                                                                                                                             100.0%; Score 2063; DB 9; 100.0%; Pred. No. 9.6e-125;
                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                384;
                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                             Gaps
                                                                                   180
                                                   180
                                                                                                                      120
                                                                                                                                                                                         60
                240
                                                                                                                                                                                                                            60
```

```
US-10-087-464-10
(S-10-087-464-10)
(Sequence 10, Application US/10087464)
(Publication No. US20030059436A1)
(GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Oh, Steven
APPLICANT: Liu, David
APPLICANT: Goel, Vikas
APPLICANT: Li, Xuerong
TITLE OF INVENTION: Band 3 Antigenic Peptides, Malaria Pol
FILE REFERENCE: S1237/7019
FULE REFERENCE: S1237/7019
CURRENT APPLICATION NUMBER: US/10/087,464
CURRENT FILING DATE: 2002-03-01
PRIOR APPLICATION NUMBER: US 06/272,930
PRIOR FILING DATE: 2001-03-02
NUMBER OF SEQ ID NOS: 59
                                                                                                                                                    Ş
                                                                                                                                                                                       밁
                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; TYPE: PRT ; ORGANISM: Plasmodium falciparum US-10-087-464-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 2
US-10-087-464-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn version 3.0
SEQ ID NO 11
LENGTH: 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 11, Application US/10087464 Publication No. US20030059436A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Chishti, Athar
APPLICANT: Oh, Steven
APPLICANT: Liu, David
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                     301
                                                                                                                                                    322
                                                                                                                                                                                       241
                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                         202
                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                        142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                           82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22 GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                   GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                     GMVFENLAKTYLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                     CECTRPDSYPLFDGIFCSHHHHHH 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKIT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GIADLSTDYNHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQN 300
                                                                                                                                                    EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                          GEAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GIADLSTDYNHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQN
                                                                                                                     EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IETLYKTVNHKIDLEVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 1879; DB 9;
Pred. No. 5.7e-113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Polypeptides and Uses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                     357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                     321
                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                      201
                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: L1, Xuerong
TITLE OF INVENTION: Band 3 Antigenic Peptide
FILE REFERENCE: $1237/7019
CURRENT APPLICATION NUMBER: US/10/087,464
CURRENT FILING DATE: 2002-03-01
PRIOR APPLICATION NUMBER: US 06/272,930
PRIOR FILING DATE: 2001-03-02
PRIOR FILING DATE: 2001-03-02
VUMBER OF SEQ ID NOS: 59
SOFTWARE: Patentin version 3.0
SEQ ID NO 10
SEQ ID NO 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; LENGTH: 1639
; TYPE: PRT
; ORGANISM: Plasmodium falciparum
US-10-087-464-10
                                                                                                                                                                                                                                                                                                                                                                                         US-09-978-756-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
            PRIOR FILING DATE: 2000-04-20
PRIOR APPLICATION NUMBER: 09/311,817
PRIOR FILING DATE: 1999-05-13
PRIOR APPLICATION NUMBER: 2.271,451
PRIOR FILING DATE: 1999-05-25
PRIOR APPLICATION NUMBER: 9909072.2
PRIOR APPLICATION NUMBER: 9909072.2
PRIOR FILING DATE: 1999-04-20
NUMBER OF SEQ ID NOS: 3
SOFTWARE: Patentin version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 355
                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                     Sequence 2, Application US/09978756 Patent No. US20020160017A1
                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                    APPLICANT: Holder, APPLICANT: Birdsa. APPLICANT: Feeney.
                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/978,756
CURRENT FILING DATE: 2001-10-16
                                                                                                                                                                                                                   TITLE OF INVENTION: Malaria Vaccine FILE REFERENCE: 18396/1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Chishti, Athar APPLICANT: Oh, Steven APPLICANT: Liu, David
                                                                                                                                                                PRIOR APPLICATION NUMBER: PCT/GB00/01558
 NO
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1262 GEAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                355;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22 GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RENFKNYLESDLIPYKDLTSSNYVYKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                        EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 1618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RENFKNYLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                   Feeney, James
Morgan, William
Syed, Shabih
                                                                                                                                                                                                                                                                                                    Birdsall, Berry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Goel, Vikas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91.18;
llarity 99.48;
Conservative
                                                                                                                                                                                                                                                                                                                       Anthony
                                                                                                                                 09/311,817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Antigenic Peptides, Malaria Polypeptides and Uses There
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 1879; D
Pred. No. 3e-1
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3e-112;
```

DB 9; 2

Length 1639;

0

1321 81

1441

```
δÃ
                                               В
                                                                   γQ
                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
   밁
                                                                                                                   Ωy
                                                                                                                                                                                           US-10-087-464-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-087-464-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Plasmodium US-09-978-756-2
                                                                                                                                            Query Match
Best Local S
Matches 354
                                                                                                                                                                                                     SEQ ID NO 34
LENGTH: 376
TYPE: PRT
ORGANISM: Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 34, Application US/10087464 Publication No. US20030059436A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                               TITLE OF INVENTION: Band 3 Antigenic Peptides, Malaria Polypeptides and Uses Thereof FILE REFERENCE: S123/7019
CURRENT APPLICATION NUMBER: US/10/087,464
CURRENT FILING DATE: 2002-03-01
PRIOR APPLICATION NUMBER: US 06/272,930
PRIOR FILING DATE: 2001-03-02
PRIOR FILING DATE: 2001-03-02
NUMBER OF SEQ ID NOS: 59
                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Chishti, Athar
APPLICANT: Oh, Steven
APPLICANT: Liu, David
                                                                                                                                                                                                                                                      SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT
   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  144
                       144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                             354;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84
                                                                      84
                                                                                                                   24
                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                      PatentIn version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
Goel, Vikas
Li, Xuerong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DKCVENPNPTCHENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                            NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LNYTYEKSNVEVKIKELNYLKTIODKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                               NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEAKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NEKNVLESDLIPYKDLTSSNYVVKDPYKELNKEKRDKELSSYNYIKDSIDTDINEANDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LNYTYEKSNYEVKIKELNYLKTIQDKLADFKKNNNFYGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VFENLAKTVLSNLLDGNLQGMLNI SQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                    falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 falciparum
                                                                                                                                           90.8%; Score 1874; I
99.7%; Pred. No. 1.20
tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90.8%; Score 1874; DB 9 99.7%; Pred. No. 1.2e-11 tive 0; Mismatches
                                                                                                                                         1.2e-112;
hes 1;
                                                                                                                                                                  BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 376;
                                                                                                                                                                 Length 376;
                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                       203
                                              120
                                                                      143
                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
 180
                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                             멍
                                                                                                                Q
                                                                                                                                           밁
                                                                                                                                                                δĀ.
                                                                                                                                                                                          밁
                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
```

```
APPLICANT: Chang, Sandra P.

APPLICANT: Hashimoto, Ann
APPLICANT: Hashimoto, Ann
APPLICANT: Nishimoto, Tani
TITLE OF INVENTION: BACULOVIRUS PRODUCED PLASMODIUM FAI
TITLE OF INVENTION: BACULOVIRUS PRODUCED PLASMODIUM FAI
TITLE OF TENTION: BACULOVIRUS PRODUCED PLASMODIUM FAI
CURRENT APPLICATION NUMBER: US-/10/062,809
CURRENT ETLING DATE: 2002-06-28
PRIOR APPLICATION NUMBER: US-09/500,376
PRIOR APPLICATION NUMBER: US-60/266,281
PRIOR FILING DATE: 2001-02-01
NUMBER OF SEQ ID NOS: 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TYPE: PRT; ORGANISM: plasmodium US-10-062-809-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   us-10-062-809-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Pat
SEQ ID NO 5
LENGTH: 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 5, Application US/10062809 Publication No. US20030100106A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                               204 LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          204 LNYTYEKSNYEVKIKELNYLKTIQDKLADFKKNNNFYGIADLSTDYNHNNLLTKFLSTGM
301
                                     323
                                                                               241
                                                                                                   264 VFENLAKTVLSNLLDGNL-QGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQE
                                                                                                                                                                                                                                                     121 GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEAKV
                                                                                                                                                                                                                                                                         144 GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             331;
                                                                                                                                                                                                                                                                                                                                                             84 NFKNYLESDLIPYKDLISSNYYVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                               24 AVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTENVNVKDILNSRFNKRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PatentIn version 3.1
                                                                             AVTTSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
GDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDCYPLFDGIFCS
                      GDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
                                                                                                                                                                                                                                                                                                                                       NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               83.3%;
93.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 1719.5; DB 9
Pred. No. 9.1e-103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FALCIPARUM VACCINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                         322
                                                                                                                                                                 240
                                                                                                                                                                                                       263
                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                           203
                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                               143
                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                               300
```

RESULT 7
US-10-062-809-4
; Sequence 4, Application US/10062809
; Publication No. US20030100106A1
; GENERAL INFORMATION:
; APPLICANT: Chang, Sandra P.

26;

```
US-10-098-514-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-062-809-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR FILING DATE: 2001-02-01
NUMBER OF SEO ID NOS: 79
SOFTWARE: PATENTIN VERSION 3.1
SEO ID NO 4
LENGTH: 375
TYPE: PRT
                                                                                              SOFTWARE: PatentIn SEQ ID NO 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 14, Application US/10098514 Publication No. US20020194648A1 GENERAL INFORMATION:
                                                                                                                                 TITLE OF INVENTION: PLASMODIUM FALCIPARUM MEROZOITE SURFACE PROTEIN-1 MALARIA PRODUCE FILE OF INVENTION: TRANSGENIC PLANTS
FILE REFERENCE: A-71339/RFT/TAL/NBC
CURRENT APPLICATION NUMBER: US/10/098,514
CURRENT FILING DATE: 2002-08-06
PRIOR APPLICATION UMBER: US 09/500,376
PRIOR APPLICATION UMBER: US 09/500,376
PRIOR PILING DATE: 2000-02-08
PRIOR FILING DATE: 2000-03-09
PRIOR FILING DATE: 2001-03-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Chang,
APPLICANT: Christ
APPLICANT: Vine,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: BACULOVIRUS PRODUCED PLASMODIUM FALCIPARUM VACCINE PILE REFERENCE: A-67984-1/RFT/TAL/NBC CURRENT PLICATION NUMBER: US/10/062,809
CURRENT FILING DATE: 2002-06-28
PRIOR APPLICATION NUMBER: US 9/500,376
PRIOR FILING DATE: 2000-02-08
PRIOR FILING DATE: 2000-02-08
PRIOR APPLICATION NUMBER: US 60/266,281
                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                              ORGANISM: Artificial sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PPLICANT:
         FEATURE:
                                                                         LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121 GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEAKV 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   264 VFENLAKTVLSNLLDGNL-QGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQE 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKV 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GDRCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCQCTKPDSYPLSMVIFCS 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VFENLLKSILSNLLDWKLARYVKHFTTPMRKKTMIQQNSGCFRHLDEREECKCLLNYKQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LNYTYEKSNVE--IKELIYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AVTPSVIHNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSPFNKRE
                                                                                                                                                                                                                                                                                                                                                                                                                                    Christopher, David A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nishimura,
                                                                                                                                                                                                                                                                                                                                                                      Bugos, Robert
                                                                                                                                                                                                                                                                                                                                                                                        Su, Wei-Wen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hashimoto, Ann
Nishimura, Tani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sandra P
                                                                                                                                                                                                                                                                                                                                                                                                                Benjamin
                                                                                                                     version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          80.4%;
90.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1658.5; DB Pred. No. 7.3e-997; Mismatches 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
    맑
                                           Š
                                                                                          밁
                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                       ; OTHER INFORMATION: synthetic US-10-062-809-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 9
US-10-062-809-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; OTHER INFORMATION: synthetic US-10-098-514-14
                                                                                                                                                                                                    Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: PatentIn
SEQ ID NO 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION
                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 16, Appublication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Chang, Sandra P.
APPLICANT: Hashimoto, Ann
APPLICANT: Nishimura, Tani
APPLICANT: Nishimura, Tani
TITLE OF INVENTION: BACULOVIRUS PRODUCED PLASMODIUM FALCIPARUM VACCINE
FILE REFERENCE: A-67984-1/RFT/TAL/NBC
CURRENT APPLICATION NUMBER: US/10/062,809
CURRENT FILING DATE: 2002-06-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: US 60/266,281 PRIOR FILING DATE: 2001-02-01 NUMBER OF SEQ ID NOS: 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: US 09/500,376
PRIOR FILING DATE: 2000-02-08
                                                                                                                                                                                                                                                                                                                                      LENGTH: 402
TYPE: PRT
ORGANISM: Artificial sequence
                                                                                                                                                                                                                                                                                                                 FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                221 NYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGMVFENLAKTVLSNLLDGN 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  118 LLKSYKYIKESVENDIKFAQEGISYYEKVLAKYKDDLESIKKVIKEEKEKFPSSPPTTPP 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
  58
                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       58 EKNIFTFNLNLNDILNSRLKKRKYFLDVLESDLMQFKHISSNEYIIEDSFKLLNSEQKNT 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     251; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MWSWKCLLFWAVLVTATLCTAGAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQL 60
                                                                                                                                                                                                  Similarity
EKNIFTFNLMLNDILNSKLKKRKYFLDVLESDLMQFKHISSNEYIIEDSFKLLNSEQKNT
                                           ENNYMTFNVNVKDILNSRFNKRENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDK 120
                                                                                                                                 MWSWKCLLFWAVLVTATLCTAGAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDADARCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS--HHHHHH 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SDLKAIDDKIDLFKNHNDFDAIKKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FLSSYNYIKDSIDTDINFANDVLGYYKILSEKYKSDLDSIKKYI-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MWSWKCLLFWAVLVTATLCTAAISVT---MDNILSGFENEYDVIYLKPLAGVYRSLKKQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCSPPHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----NDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKVLNYTYEKSNVEVKIKEL 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ENNVMTFNVNVKDILNSRFNKRENFKNVLESDLIPYKDLISSNYVVKDPYKFLNKEKRDK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LQGMLNTSQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGG 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SPAKTDEQKKESKFLPFLTNIETLYNNLVNKIDDYLINLKAKINDCNVEKDEAHVKITKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/10062809
                                                                                                                                                                             65.3%; Score 1347; DB 9; ilarity 61.8%; Pred. No. 6.8e-79; Conservative 55; Mismatches 74;
                                                                                                                                                                                                                                                                                                                                                                                                                                  version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          65.3%;
61.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     55; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1347; DB 9;
Pred. No. 6.8e-79;
                                                                                                                                                                                                                    Length 402;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 402;
                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
```

356

237

164

26;

117

57

Š 밁 Š 밁 δÃ 밁 Ş 밁 δ 밁

S

```
CURRENT APPLICATION NUMBER: US/10/062,809
CURRENT FILING DATE: 2002-06-28
PRIOR APPLICATION NUMBER: US 09/500,376
PRIOR FILING DATE: 2000-02-08
PRIOR APPLICATION NUMBER: US 60/266,281
PRIOR FILING DATE: 2001-02-01
NUMBER OF SEQ ID NOS: 79
SOFTWARE: Patentin version 3.1
SEQ ID NO 18
Š
                                 밁
                                                          δõ
                                                                                             밁
                                                                                                                                 Š
                                                                                                                                                                      밁
                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 10
US-10-062-809-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-062-809-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 18, Application US/10062809 Publication No. US20030100106A1
                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Chang, Sandra P.
APPLICANT: Hashimoto, Ann
APPLICANT: Nishimura, Tani
TITLE OF INVENTION: BACULOVIRUS PRODUCED PLASMODIUM
FILE REFERENCE: A-67984-1/RFT/TAL/NBC
FILE REFERENCE: N-67984-1/RFT/TAL/NBC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 396
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             OTHER INFORMATION: synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Artificial sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                Local
 281
                                                                                                    178
                                                                                                                                                                      118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   165
                                                                     221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     118
                                                                                                                                      165
                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                              245;
                                                                                                                                                                                                                                         58
                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                      NYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGMVFENLAKTVLSNLLDGN
                                                                                                   SPAKTDEQKKESKFLPFLTNIETLYNNIVNKIDDYLINLKAKINDCNVEKDEAHVKITKL
                                                                                                                                                                                      ENNVYTENVNVKDILNSRENKRENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDK 120
                                                                                                                                                                                                                                                                                                                            MWSWKCLLFWAVLVTATLCTAGAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS--HHHHHH 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SDLKAIDDKIDLFKNHNDFDAIKKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGK 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGMVFENLAKTVLSNLLDGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----NDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKVLNYTYEKSNVEVKIKEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LLKSYKYIKESVENDIKFAQEGISYYEKVLAKYKDDLESIKKVIKEEKEKFPSSPPTTPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FLSSYNYIKDSIDTDINFANDVLGYYKILSEKYKSDLDSIKKYI----
LOGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGG
                                 SDLKAIDDKIDLFKNHNDFDAIKKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGK
                                                                                                                                                                    LLKSYKYIKESVENDIKFAQEGISYYEKVLAKYKDDLESIKKVIKEEKEKFPSSPPTTPP
                                                                                                                                                                                                                                      EKNIFTFNLNLNDILNSRLKKRKYFLDVLESDLMQFKHISSNEYIIEDSFKLLNSEQKNT 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SPAKTDEOKKESKFLPFLTNIETLYNNLVNKIDDYLINLKAKINDCNVEKDEAHVKITKL
                                                                                                                                                                                                                                                                                                         MWSWKCLLFWAVLVTATLCTAAISVT---MDNILSGFENEYDVIYLKPLAGVYRSLKKQI 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCSPPHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FQDMLNISQHQCVKKQCPENSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGG
                                                                                                                                 ----NDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKVLNYTYEKSNVEVKIKEL
                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                            63.5%;
                                                                                                                                                                                                                                                                                                                                                                              55;
                                                                                                                                                                                                                                                                                                                                                                                            Score 1310; DB 9; Pred. No. 1.6e-76;
                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                        Length 396;
                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FALCIPARUM VACCINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            402
                                                                                                                                                                                                                                                                                                                                                                          24;
                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                 280
                                                                                                   237
                                                                                                                                                                                                    164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   177
                                   296
                                                                                                                                  220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                              Š
                                                                               밁
                                                                                                             Qγ
                                                                                                                                                  밁
                                                                                                                                                                               ρ
                                                                                                                                                                                                                    ₽
                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-098-514-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-098-514-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 4, Application US/10098514
Publication No. US20020194648A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Bugos, Robert
TITLE OF INVENTION: PLASHODIUM FALCIDARUM MEROZOITE
TITLE OF INVENTION: TRANSGENIC PLANTS
FILE REFERENCE: A-71.339/RFT/TAL/NBC
CURRENT APPLICATION NUMBER: US/10/098,514
CURRENT FILING DATE: 2002-08-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR FILING DATE: 2001-03-09
NUMBER OF SEQ ID NOS: 19
SOFTWARE: PatentIn version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: US 09/500,376
PRIOR FILING DATE: 2000-02-08
PRIOR APPLICATION NUMBER: US 60/274,599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Chang, Sandra APPLICANT: Christopher,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
NAME/KEY: MISC_FEATURE
LOCATION: (380)..(380)
OTHER INFORMATION: "Xaa" at position 380 represents a stop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 383
TYPE: PRT
ORGANISM: Artificial sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: synthetic
                 367
                                                                                   307
                                                                                                                 310
                                                                                                                                                  248 TKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENSGCFRHLDE
                                                                                                                                                                                    250
                                                                                                                                                                                                                       188
                                                                                                                                                                                                                                                       190
                                                                                                                                                                                                                                                                                         128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     297
                                                                                                                                                                                                                                                                                                                     150 SEKYKSDLDSIKKYI----------NDKQGENEKYLPFLNNIETLYKTVN 189
                                                                                                                                                                                                                                                                                                                                                          68
                                                                                                                                                                                                                                                                                                                                                                                          90
                                                                                                                                                                                                                                                                                                                                                                                                                                                            30
                                                                                                                                                                                                                                                                                                                                                                                                                          8 MDNILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIFTFNLNLNDILNSRLKKRKYFLDVL 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSY 369
                                                                                                                                                                  NHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDE 309
                                                                                                                                                                                                                                                                                                                                                                          ESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVLGYYKIL 149
                                                                                                                                                                                                                                                                                                                                                                                                                                            CDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 394
                                                                                                                                                                                                                                                    HKIDLFVIHLEAKVLNYTYEKSNYEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDY 249
                                                                                                                                                                                                                                                                                       LAKYKDDLESIKKVIKEEKEKFPSSPPTTPPSPAKTDEQKKESKFLPFLTNIETLYNNLV 187
                                               PLFDGIFCSH 379
                                                                                                                                                                                                                      NKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNHNDFDAIKKLINDD
                                                                                                                                                                                                                                                                                                                                                         ESDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQEGISYYEKV 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Su, Wei-Wen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Vine, Benjamin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Christopher, David
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            58.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1198.5; DB
Pred. No. 2.1e-69;
4; Mismatches 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SURFACE PROTEIN-1 MALARIA PROD
```

Length 383;

21;

Gaps

306

247

codon

```
Ş
                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; NAME/KEY: MISC_FEATURE ; LCCATION: (380)..(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380) ...(380
                                                                                                         US-10-062-809-2
                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-098-514-2
                       Sequence 2, Application US/10062809 Publication No. US20030100106A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2, Application US/10098514
Publication No. US20020194648A1
GENERAL INFORMATION:
APPLICANT: Chang, Sandra P
APPLICANT: Christopher, David A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn version 3.1 SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILE REFERENCE: A-71339/RFT/TAL/NBC
CURRENT APPLICATION NUMBER: US/10/098,514
CURRENT FILING DATE: 2002-08-06
PRIOR APPLICATION NUMBER: US 09/500,376
PRIOR FILING DATE: 2000-02-08
PRIOR APPLICATION NUMBER: US 60/274,599
PRIOR FILING DATE: 2001-03-09
     APPLICANT: Chang,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS: 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: PLASMODIUM FALCIPARUM TITLE OF INVENTION: TRANSGENIC PLANTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
OTHER INFORMATION: synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Artificial sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                             368
                                                                                                                                                                                                                                                             371
                                                                                                                                                                                                                                                                                                               308
                                                                                                                                                                                                                                                                                                                                                                 311
                                                                                                                                                                                                                                                                                                                                                                                                                   249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                     LFDGIFCSH
                                                                                                                                                                                                                                                                                                                                                                                                                                     HNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDER 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYN 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTENVNVKDILNSRFNKRENFKNVLE
                                                                                                                                                                                                           LFDGIFCSH
                                                                                                                                                                                                                                                                                                                                                                                                                KKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENSGCFRHLDER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AKYKDDLESIKKVIKEEKEKFPSSPPTTPPSPAKTDEQKKESKFLPFLTNIETLYNNLVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIFTFNLNLNDILNSRLKKRKYFLDVLE
                                                                                                                                                                                                                                                                                                            EECKCLLNYKQEGDKCYENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNHNDFDAIKKLINDDT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQEGISYYEKVL 128
                                                                                                                                                                                                                                                                                                                                                              EECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYP 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bugos, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Su, Wei-Wen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Vine,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
       Sandra P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Benjamin
                                                                                                                                                                                                           376
                                                                                                                                                                                                                                                             379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   58.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1197.5;
Pred. No. 2.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEROZOITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .4e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SURFACE PROTEIN-1 MALARIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 383;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68
                                                                                                                                                                                                                                                                                                                                                                                                                307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRODUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-978-756-3; Sequence 3, Application US/09978756; Patent No. US20020160017A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                    CURRENT APPLICATION NOMBER: US/09/978,756
CURRENT FILING DATE: 2001-10-16
PRIOR APPLICATION NUMBER: PCT/GB00/01558
PRIOR FILING DATE: 2000-04-20
PRIOR APPLICATION NUMBER: 09/311,817
PRIOR APPLICATION NUMBER: 09/311,817
PRIOR APPLICATION NUMBER: 2,271,451
                                                                                                                                                                                                                                                     APPLICANT: Syed, Shabih
TITLE OF INVENTION: Malaria Vaccine
FILE REFERENCE: 18396/1005
                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Holder, Anthony APPLICANT: Birdsall, Berr
                                                    PRIOR
APPLICATION NUMBER: FILING DATE: 1999-04
                                                  FILING DATE: 1999-05-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      370 PLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             σ
                                                                                                                                                                                                                                                                                       Morgan, ...
Morgan, shabih
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                      Feeney, James
                                                                                                                                                                                                                                                                                                                                 William
                                                                                                                                                                                                                                                                                                                                                                                 Berry
```

9909072.2

```
; TYPE: PRT ; ORGANISM: plasmodium falciparum US-10-062-809-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: US 60/266,281
PRIOR FILING DATE: 2001-02-01
NUMBER OF SEQ ID NOS: 79
SOFTWARE: Patentin version 3.1
SEQ ID NO 2
LENGTH: 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: BACULOVIRUS PRODUCED PLASMODIUM FALCIPARUM VACCINE EILE REFERENCE: A-67984-1/RFT/TAL/NBC CURRENT APPLICATION NUMBER: US/10/062,809
CURRENT FILING DATE: 2002-06-28
PRIOR APPLICATION NUMBER: US 09/500,376
PRIOR FILING DATE: 2000-02-08
                                                                                                                                                                                                                                                                                                                                                                      h 57.8%;
Similarity 60.2%;
22; Conservative 54
                                                                                                                                                                                      NHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDE
                                                                                                                                                                                                                                                                                                                                                                                                                                     ESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVLGYYKIL
                                                                              REECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSY
                                                                                                      REECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSY
                                                                                                                                                                TKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENSGCFRHLDE
                                                                                                                                                                                                                                               NKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNHNDFEAIKKLINDD
                                                                                                                                                                                                                                                                                        HKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDY
                                                                                                                                                                                                                                                                                                                                 LAKYKDDLESIKKVIKEEKEKFPSSPPTTPPSPAKTDEQKKESKFLPFLTNIETLYNNLV
                                                                                                                                                                                                                                                                                                                                                                                                                 ESDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQEGISYYEKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MDNILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIFTFNLNLNDILNSRLKKRKYFLDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hashimoto, Ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nishimura, Tani
373
                                         378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1191.5; DB y;
Pred. No. 6e-69; .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                      249
                                                                                                                                                                                                                                                                                                                                 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                      149
                                                                                                                       369
                                                                                                                                                                                                       309
                                                                                                                                                                                                                                                                                                                                                                                                                 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                65
                                                                              364
                                                                                                                                                                304
                                                                                                                                                                                                                                               245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         89
```

```
밁
                               Ş
                                                                                                                         ; ORGANISM: plasmodium falciparum US-10-062-809-3
                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
US-10-062-809-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-978-756-3
                                                                                                                                                                  SEQ ID NO 3
TENGTH: 394
                                                                                                                                                                                                                                                                                                                                                                                              Sequence 3, Application US/10062809
Publication No. US20030100106A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO 3
LENGTH: 394
TYPE: PRT
ORGANISM: Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                              Matches
                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 218;
                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: BACULOVIRUS PRODUCED PLASMODIUM FALCIPARUM VACCINE FILE REFERENCE: A-67984-1/RET/TAL/NBC CURRENT APPLICATION NUMBER: US/10/062,809

CURRENT FILING DATE: 2002-06-28
                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Chang, Sandra P.
APPLICANT: Hashimoto, Ann
APPLICANT: Nishimura, Tani
                                                                                                                                                                                               PRIOR FILING DATE: 2001-02-01
NUMBER OF SEQ ID NOS: 79
SOFTWARE: PatentIn version 3.
                                                                                                                                                                                                                                            PRIOR APPLICATION NUMBER: US 09/500,376
PRIOR FILING DATE: 2000-02-08
PRIOR APPLICATION NUMBER: US 60/266,281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 3
SOFTWARE: PatentIn version 3.0
                                                                                                                                                       LENGTH: 39
TYPE: PRT
                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             246 TKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENSGCFRHLDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               190 HKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDY 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                126 LAKYKDDLESIKKVIKEEKEKFPSSPPTTPPSPAKTDEQKKESKFLPFLINIETLYNNLV 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 365 PLFDGIFCS 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           250
                                                              219;
66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        90 ESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVLGYYKIL 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30 IDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRENFKNVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PLFDGIFCS 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MDNILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIFTFNLNLNDILNSRLKKRKYFLDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDE 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNPYDFEAIKKLINDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ESDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQEGISYYEKV 125
                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                   version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                56.3%;
                                                          56.1%; Score 1156.5; DB 9; 59.0%; pred. No. 1e-66; 73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               54; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 1161.5; DB y; Pred. No. 5e-67; Indels
                                                                                         DB 9;
                                                              Indels
                                                                                         Length 394;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 394;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21;
                                                              25;
                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2
```

```
밁
                 δÃ
                                      밁
                                                        δÃ
                                                                             밁
                                                                                               Š
                                                                                                                     밁
                                                                                                                                         Ş
                                                                                                                                                              밁
                                                                                                                                                                                Ş
                                                                                                                                                                                                      밁
                                                                                                                                                                                                                         Ş
363
                                       303
                                                           308
                                                                                                                       186
                                                                                                                                          190
                                                                                                                                                             250
                                                                                                                                                                                   150
                  368 SYPLFDGIFCS 378
                                                                             246 TKKDMLGKLLSTGLVQIFPN---TIISKLIEGKFQDMLNISQHQCVKKQCPENSGCFRHL
                                                                                                                                                                                                      66
                                                                                                                                                                                                                         90
                                     NKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLEKNTNDFEAIKKLINDD
                                                                                                                                                                                                                 ESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKELSSYNYIKDSIDTDINFANDVLGYYKIL 149
SYPLFDGIFCS
                                                                                               NHNNLLTKFLSTGMV--FENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHL
                                                                                                                                          HKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDY
                                                                                                                                                                           ESDLMQFKHISSNEYIIEDSFKLLNSEQKNILLKSYKYIKESVENDIKFAQEGISYYEKV 125
373
                                      362
                                                         367
                                                                             302
                                                                                                307
                                                                                                                     245
                                                                                                                                         249
```

Search completed: June 11, 2003, 16:12:02 Job time : 23 secs

GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd

OM protein protein search, using sw model

Run June 11, 2003, 16:02:30 ; Search time 40 Seconds (without alignments) 922.890 Million cell

updates/sec

Title: Perfect score: US-09-500-376-8 2063 1 MWSWKCLLFWAVLV

Scoring table: BLOSUM62 Gapop 10.0 , MWSWKCLLFWAVLVTATLCT.....KPDSYPLFDGIFCSHHHHHH

Gapext 0.5

Searched: 283224 seqs, 96134422 residues

Total number of hits satisfying chosen parameters: 283224

Minimum DB Maximum DB seq length: 0 length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 s

summaries

Database

score q Pred. No. No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.

SUMMARIES

29	28	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	ر د	4	₃	2		No.	Result	
143.5	145.5	146.5	146.5	146.5	146.5	148.5	149	149.5	150.5	151.5	152.5	161	168.5	546.5	564.5	564.5	742.5	743.5	1158	1174	1186	1193	1196.5	1684.5	1726.5	1879	1879	Score		
7.0	7.1	7.1	7.1	7.1	7.1	7.2	7.2	7.2	7.3	7.3	7.4	7.8	8.2	26.5	27.4	27.4	36.0	36.0	56.1	56.9	57.5	57.8	58.0	81.7	83.7	91.1	91.1		Query	,
722	3844	2819	2708	2539	1619	2013	1714	706	1306	481	1939	3394	980	1785	1772	680	1751	1726	1701	1701	1726	1726	651	1640	1631	1639	400	Length 1		
N		s N	N	2	N	N	N	N	N	N	N	N	N	N	N	Ν	N	N	Ν	N	N	\vdash	N	2	Н	N	N	B		
D71607	T18402	T09080	T09079	в71619	T18499	C71610	E71609	A57719	T28313	T18465	T18372	T18501	E71606	A45546	A45532	A28121	A45604	A39401	A26868	A54498	A45948	SAZQGM	S47282	A24594	SAZQK1	S05603	A45545	Ħ		
							•																							•
VPS45-like protein	esparagine/asparta	probable chloroqui	probable chloroqui	hypothetical prote	hypothetical prote			dihydropteroate sy	ORF MSV152 probabl	hypothetical prote	repeat organellar		hypothetical prote	merozoite			major blood-stage	oite surfac	merozoite	merozoite	merozoite	major merozoite su	merozoite surface			major merozoite su	major merozoite su	cription		

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	
138.5	138.5	139	139.5	139.5	139.5	139.5	140	141	141	141.5	141.5	141.5	143.5	143.5	143.5	
6.7	6.7	6.7	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.9	6.9	6.9	7.0	7.0	7.0	
822	707	2269	1979	1121	822	361	2910	2401	1711	1005	822	662	2500	1712	1516	
μ	N	N	N	N	N	N	N	N	N	N	_	N	N	ຎ	Ν	
TVMSFG	T28418	T28677	C71622	F71613	I49289	PN0020	T28156	T28676	T18429	A64465	TVHUFG	C40862	G71609	C71618	E71619	
													-			
												,				

ALIGNMENTS

major merozoite surface antigen - malaria parasite (Plasmodium falciparum) (fragments C;Species: Plasmodium falciparum C;Species: 17-Feb-1994 #sequence_revision 17-Feb-1994 #text_change 09-Jun-2000 C;Accession: A45545 R;Blackman, M.J.; Ling, I.T.; Nicholls, S.C.; Holder, A.A. Mol. Biochem. Parasitol. 49, 29-33, 1991 A;Title: Proteolytic processing of the Plasmodium falciparum merozoite surface protei A;Reference number: A45545; MUID:92131048; PMID:1775158 R;Accession: A45545

A;Status: preliminary
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-400 <BLA>
A;Note: sequence extracted from NCBI backbone (NCBIN:77612, NCBIP:77621)
A;Note: sequence extracted from NCBI backbone (NCBIN:77612, NCBIP:77621)
C;Superfamily: major merozoite surface antigen
C;Keywords: glycoprotein; merozoite; surface antigen; tandem repeat

Query Match Best Local : Length 400;

ρ Matches Local Similarity Conservative 91.1%; 0; Mismatches Score 1879; DB 2; Pred. No. 1.7e-92; Indels 0; Gaps 0

δÃ 밁 141 82

ş 밁 201 142

밁

Qy 밁 δÃ 262 203 GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ 321 KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST 262

δÃ 밁 323 322 263 EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378 GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ 322

RESULT 2
\$03603

RESULT 2

SO5603

major merozoite surface antigen precursor N;Alternate names: gpl95 surface antigen
C;Species: Plasmodium falciparum malaria parasite (Plasmodium falciparum)

```
RESULT 3
SAZQK1
major merozoite surface antigen precursor - maic; Species: Plasmodium falciparum
C; Date: 30-Sep-1987 #sequence_revision 30-Sep-
C; Accession: A25120
R; Mackay, M.; Goman, M.; Bone, N.; Hyde, J.E.
EMBO J. 4, 3823-3829, 1985
EMBO J. 4, 3823-3829, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Title: Nucleotide and deduced amino acid see A; Reference number: $04850; MUID:89345116; PM. A; Accession: $04850 at 254850 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Date: 12-Feb-1993 *seque
C; Accession: S05603; S0485
R; Myler, P.J.
submitted to the EMBL Data
A; Reference number: S05603
A; Accession: S05603
A; Accession: S05603
A; Molecule type: mRNA
A; Residues: 1-1639 <MYL>
A; Molecule type: DNA
A; Residues: 1-1631 CMAC>
A; Residues: 1-1631 CMAC>
C; Comment: The merozoite stages of different strains have s:
C; Comment: P. falciparum has three stages: sporozoite, mero:
C; Superfamily: major merozoite surface antigen; tande:
C; Reywords: glycoprotein; merozoite; surface antigen; tande:
F; 1-19/Domain: signal sequence #status predicted <SIG>
F; 20-1631/Product: major merozoite surface antigen #status
F; 67-84/Region: 3-residue repeats (S-G-T/P)
F; 1614-1631/Domain: membrane anchor #status predicted <MBN>
F; 97, 259, 755, 759, 835, 911, 955, 1049, 1156, 1165, 1436, 1563/Bindi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                         A; Accession: A25120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맒
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleic Acids Res. 17, 5401, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: EMBL:X15063; NID:g9896; R;Myler, P,J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query
Best I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Superfamily: major merozoite surface antigen
;Keywords: glycoprotein; merozoite; surface antigen
;1-19/Domain: signal sequence #status predicted <SIG>
;20-1639/Product: major merozoite surface antigen #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Госа1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12-Feb-1993 **sequence_revision 12-Feb-1993 **sion: S05603; S04850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         to the EMBL Data
ce number: S05603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              355;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTENVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RENFKNYLESDLIPYKDLTSSNYVYKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EGDKCYENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ 156:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLIKFLST 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GEAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RENFKNYLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                  stages of different strains have strain-specific has three stages: sporozoite, merozoite, and game
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                91.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1879; DB 2;
Pred. No. 8.4e-92;
D; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                April
                                                                                                                                                                                                                                                                                                                                                                                                                                       30-Sep-1987
                                                                                                                                                                                                                                                                                                                                                                                      J.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1989
                                                                                                                                                                                                                                                                                                              the major surface antigens of Plasmodium PMID: 3004972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence of the PMID: 2668887
       predicted <MBN>,1436,1563/Binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     malaria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PIDN:CAA33163.1;
                                                                                                                                                                                                                                                                                                                                                                                      Scaife,
                                                                                                                                                                                                                                                                                                                                                                                                                                    #text_change 09-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #text_change 09-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     parasite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1639
                                                                                                                                   tandem
                                                                                                                                                                                                                                                                                                                                                                                      ٦.;
                                                                                  predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           predicted
                                                                                                                                                                                                                                                                                                                                                                                      Certa,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gp195 (MSA-1)
                                                                                                                                 repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PID: g9897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Plasmodium falciparum)
          site: carbohydrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                      □.;
                                                                                     AMAT>
                                                                                                                                 transmembrane
                                                                                                                                                                                  lfic surface gametocyte.
                                                                                                                                                                                                                                                                                                                                                                                   Stunnenberg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from
          (Asn)
                                                                                                                                                                                  antige
The me
                                                                                                                                 prot
                                                                                                                                                                                                                                                                                                                                                                                   #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plasm
                                                                                                                                                                                                                                                                                                                                     fal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŝ
          맑
                                           δ
                                                                                                         밁
                                                                                                                                             δÃ
                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                  δĀ
                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Accession: A24594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nature 317, 270-273,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R; Holder, A.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Date: 29-Aug-1987
C; Accession: A24594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A24594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Sin
                                                                                                                                                                                                                                                                                                              1382
          1562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1253
                                                                                                                                                                                                                                                                                                                                                            142
                                                                                                                                                        262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22
```

```
Similarity
QEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                             GEAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                  GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                GMVFENLAKTYLSNLLDGNL-QGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYK 320
                                                                                                                                                                                                                                                              KVLNYTYEKSNYEVKIKELNYLKTIQDKLADFKKNNNFYGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                 VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA
                                                                 GMVFENLLKSILSNILDWKLARYVKHFTTPMRKKTMIQQNSGCFRHLDEREECKCLLNYK
                                                                                                                                KYLNYTYEKSNYEVKIKELIYLKTIQDKLADFKKNNNFYGIADLSTDYNHNNLLTKFLST 1492
                                                                                                                                                                                                VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                            83.7%;
                                                                                                                                                                                                                                                                                                                                                                                                6,
                                                                                                                                                                                                                                                                                                                                                                                                              Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                            1726.5; DB
No. 9.7e-84;
                                                                                                                                                                                                                                                                                                                                                                                                19;
                                                                                                                                                                                                                                                                                                                                                                                                                             ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                             ۲.
                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                              378
                                                                                                                                                                                                1432
                                                                                                                                                                                                                                                                                                                               1312
                                                                                                                                                               261
                                                                                                                                                                                                                                                              1372
                                                                                                                                                                                                                                201
                                                                                                                                                                                                                                                                                              141
```

A;Molecule type: DNA
A;Residues: 1-1640 <POL>
C;Superfamily: major merozoite surface antigen
C;Keywords: surface antigen probable major surface antigen ()
C; Species: Plasmodium falciparum A; Title: Primary structure of the precursor to the three major surface antigens A; Reference number: A24594; MUID:86014355; PMID:2995820 Similarity GEAVTTSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK GMVFENILKSVLSNLLDWKLARYVKHFTTPMRKKTMIQQSSGCFRHLDEREECKCLLNYK 156: GMVFENLAKTVLSNLLDGNL-QGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYK 320 KYLNYTYEKSNYEYKIKELNYLKTIQDKLADFKKNNNFYGIADLSTDYNHNNLLTKFLST VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK QEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND RENFKNYLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEA Lockyer, M.J.; Conservative #sequence_revision 29-Aug-1987 81.7%; 91.3%; Odink, (83K, 19K, 42K) precursor - malaria parasite Score 1684.5; DB Pred. No. 1.6e-81; 6; Mismatches 24 K.G.; Sandhu, J.S.; 24; #text_change 09-Jun-2000 2 Indels Length Riveros-Moreno, 1640 1; Gaps 378 ۷.; 141 1321 201 81 .261 1441 1381 (Plasmodi Nichol1 of. Pl

4,

```
R; Weber, J.L.; Leininger, W.M.; Lyon, J.A.

Nucleic Acids Res. 14, 3311-3323, 1986
A; Title: Variation in the gene encoding a major merozoite sur
A; Reference number: A23386; MUID:86205236; PMID:3517809
A; Accession: A23386
A; Molecule type: DNA
A; Residues: 1-1104 <WEBI>
A; Residues: 1-1104 <WEBI>
A; Cross-references: EMBL:X03831
R; Weber, J.L.; Sim, B.K.L.; Lyon, J.A.; Wolff, R.
Nucleic Acids Res. 16, 1206, 1988
A; Title: Merozoite surface protein sequence from the Camp str
A; Reference number: S06361; MUID:88143999; PMID:3278296
                                                                                                                                                                                                        major merozoite surface antigen precursor - malaria parasite (Plasmodium fa N;Alternate names: 195K glycoprotein C;Species: Plasmodium falciparum C;Date: 30-Sep-1987 #sequence_revision 31-Mar-1991 #text_change 09-Jun-2000 C;Accession: A23386; S06361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Species: Plasmodium falciparum
A;Varlety: strain RO-71
C;Date: O6-Jan-1995 #sequence_revision 26-Jul-1996
C;Accession: S47282
R;Tolle, R.; Bujard, H.; Cooper, J.A.
submitted to the EMBL Data Library, July 1994
                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Experimental source: strain RO-71 C; Superfamily: major merozoite surface antigen C; Keywords: glycoprotein; merozoite; surface a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 5
847282
847202

service surface antigen 1 - malaria parasite (Plasmodium
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÔ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Molecule type: DNA
A;Residues: 1-651 <TOL>
A;Cross-references: EMBL:Z35329; NID:g535257;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Reference number: S47282
A; Accession: S47282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Description: Plasmodium falciparum: recombination
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                              615
                                                                                                                                                                                                                                                                                                                                                                                               363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         225;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                             GAISVT-MDNILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIFTFNLNLNDILNSRLKK
                                                                                                                                                                                                                                                                                                                                                                                               CTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPQNSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADLSTDYNHNHLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TLYNNLVNKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNHNDFEAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TLYKTYNHKIDLFYIHLEAKYLNYTYEKSNYEYKIKELNYLKTIQDKLADFKKNNNFYGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GISYYEKVLAKYKDDLESIKKVIKEEKEFPSSPPTTPPSPAKTDEQKKESKFLPFLTNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VLGYYKILSEKYKSDLDSIKKYI------NDKQGENEKYLPFLNNIE 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RKYFLDVLESDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQE 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RENFKNYLESDLIPYKDLTSSNYVYKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       59.8%;
                                                                                                                                                                                                                                                                                                                                                                                             378
                                                                                                                                                                                                                                                                                                                                                              630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1196.5;
Pred. No. 3.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     e 1196.5; DB 2;
. No. 3.6e-56;
ismatches 74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PIDN: CAA84558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          within
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                   strain
                                                                                                                                                       surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           falciparum)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       651;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C-terminal region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PID:g535258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-Jun-2000
                   of.
                                                                                                                                                       antigen of the
                   the human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (strain
                                                                                                                                                                                                                                                                       falciparum)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    435
                   malaria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RO-71)
                                                                                                                                                       human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mer
                                                                                                                                                                                                                                                                         8
                   밁
                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
```

```
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-1726 <CHA>
A;Cross-references: GB:M37213
C;Superfamily: major merozoite s
C;Keywords: surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1104-1726 <a href="https://doi.org/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R;Chang, S.P.; Kramer, K.J.; Yamaga, Exp. Parasitol. 67, 1-11, 1988
A;Title: Plasmodium falciparum: gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              major merozoite surface antigen precursor - malaria parasite (Plasmodium falciparum)
C;Species: Plasmodium falciparum
C;Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change 09-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                    A; Reference number: A; Accession: A45948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C; Accession: A45948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Accession: S06361
                                                                                                                              Matches
                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
         1331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  224;
                                                                22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
ECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GISYYEKVLAKYKDDLESIKKVIKEEKEKFPSSPPTTPPSPAKTDEQKKESKFLPFLTNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RXYFLDVLESDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GEAISVT-MDNILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIFTFNLNLNDILNSRLKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ETLYNNLVNKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNHNDFEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ETLYKTVNHKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVG 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VLGYYKILSEKYKSDLDSIKKYI----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IKKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IADLSTDYNHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                   A45948;
                                                                                                                                                 57.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   rum: gene structure and hydropathy profile of the major
MUID:89005525; PMID:3049134
                                                                                                                                                                                                                                                                         surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57;
                                                                                                                        57;
                                                                                                                  Score 1186; DB
Pred. No. 4e-55;
7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. 1.7e-55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         K.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                      antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kato,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A.; Case,
                                                                                                                                                                            2;
                                                                                                                     75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                               Length
                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                - NDKQGENEKYLPFLNNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Siddiqui, W.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                     ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 carb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mе
```

Plasmod

```
major merozoite surface antigen precursor - malaria parasite (Plasmodium falciparum C; Species: Plasmodium falciparum C; Species: Plasmodium falciparum C; Date: 28-Oct-1994 #sequence_revision 28-Oct-1994 #text_change 09-Jun-2000 C; Accession: A54498
R; Peterson, M.G.; Coppel, R.L.; McIntyre, P.; Langford, C.J.; Woodrow, G.; Brown, Mol. Blochem. Parasitol. 27, 291-302, 1988
Mol. Blochem. Parasitol. 27, 291-302, 1988
A; Title: Variation in the precursor to the major merozoite surface antigens of Pla A; Reference number: A54498; MUID:88142999; PMID:2449612
A; Accession: A54498
A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
A54498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                   Ş
                                                     밁
                                                                                   Š
                                                                                                                       밁
                                                                                                                                                       Ş
                                                                                                                                                                                            В
                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                     Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Superfamily: major merozo
C;Keywords: surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Residues: 1-1701 <PET>
A; Cross-references: GB:M19143;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Superfamily: major merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                        1545
                                                                                                                                                                                              1485
                                                                                                                                                                                                                                                                 1425
                                                                                                                                                                                                                                                                                                                                                                                                     1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1450
                                                     1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1629
                     362
                                                                                       302
                                                                                                                                                          242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       242
                                                                                                                                                                                                                                                                                                                                                                     82
                                                                                                                                                                                                                                                                                                                                                                                                                                     22
                                                                                                                                                                                                                                                                                                                                                                                                     GEAISVT-MDNILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIITFNLNLNDILNSRLKK
                                                                                                                                                                                                                                                                                                                                                                                                                   GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ECTKPDSYPLEDGIFCS 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ETLYNNLVNKNDDYLINLKAKINDCNYEKDEAHVKITKLSDLKAIDDKIDLFKNHNDFEA
   ECTKPDSYPLFDGIFCS
                                                     GCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADATCTEEDSGSSRKKITC
                                                                     GCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITC
                                                                                                                        IKKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENS
                                                                                                                                                                                            ETLYNNLVNKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNTNDFEA
                                                                                                                                                                                                                                                                GISYYEKVLAKYKDDLESIKKVIKEEKEKFPSSPPTTPPSPAKTDEQKKESKFLPFLTNI
                                                                                                                                                                                                                                                                                                VLGYYKILSEKYKSDLDSIKKYI-----
                                                                                                                                                                                                                                                                                                                                 RKYFLDVLESDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQE
                                                                                                                                                                                                                                                                                                                                                                   RENFKNYLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IKKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IADLSTDYNHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ETLYKTVNHKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GISYYEKVLAKYKDDLESIKKVIKEEKEKFPSSPPTTTPSPVKTDEQKKESKFLPFLTNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VLGYYKILSEKYKSDLDSIKKYI-----
                                                                                                                                                        IADLSTDYNHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNS
                                                                                                                                                                                                                            ETLYKTVNHKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ECTRPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RKYFLDVLESDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       56.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NID:g160412;
surface antig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1174;
No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           major merozoite surface antigens of Plasmodi PMID:2449612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.7e-54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PIDN:AAA29653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----NDKQGENEKYLPFLNNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                NDKQGENEKYLPFLNNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PID:g160413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Plasmodium falciparum)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1569
                                                                                                                                                                                            1544
                                                                                                                                                                                                                                                                1484
                                                                                                                                                                                                                                                                                                                                                                                                     1364
                                                                                                                                                                                                                                                                                                                                                                                                                                     81
                                                     1663
                                                                                                                        1603
                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1449
                                                                                                                                                                                                                                                                                                                                                                   141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           141
                                                                                       361
                                                                                                                                                        301
                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           G.V.;
                                A; Molecule type: DNA
A; Residues: 1-1726 <DEL>
A; Cross-references: GB: M60807
C; Superfamily: major merozoite
C; Keywords: surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: DNA
A; Residues: 1-1701 <TAN>
C; Superfamily: major merozoite surface antigen
C; Keywords: surface antigen
C; Keywords: surface antigen
F; 1-19/Domain: signal sequence #status predicted <SIG>
F; 20-1701/Product: major merozoite surface antigen #sta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Reference number: A26868; MUID:88011243; PMID:3079521 A;Accession: A26868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 9
A26868
C;Species: Plasmodium falciparum
C;Species: Plasmodium falciparum
C;Date: 19-Nov-1988 #sequence_revision 19-Nov-1988 #text_change 09-Jun-2000
C;Accession: A26868
                                                                                                                                                       R;del Portillo, H.A.; Longacre, S.; Khouri, E.; David, P.H. Proc. Natl. Acad. Sci. U.S.A. 88, 4030-4034, 1991
A;Title: Primary Structure of the merozoite surface antigen A;Reference number: A39401; MUID:91219506; PMID:2023952
                                                                                                                                                                                                                          merozoite surface antigen 1 precursor -
C;Specles: Plasmodium vivax
C;Date: 28-Feb-1992 #sequence_revision 2
C;Accession: A39401
                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       β
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R; Tanabe, K.; Mackay, M.; Go
J. Mol. Biol. 195, 273-287,
A; Title: Allelic dimorphism
                                                                                                                                   A; Reference number: A39401; A; Accession: A39401
                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                   A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 221
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1306
                                                                                                                                                                                                                                                                                                                                                                   1662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1664
                                                                                                                                                                                                                                                                                                                                                                                                                                   1602
                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                       TCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                       NSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IADLSTDYNHNNLLTKFLSTGMY--FENLAKTYLSNLLDGNLQGMLNISQHQCYKKQCPQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ETLYKTVHKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GISYYEKVLAKYKDDLESIKKVIKEEKEKFPSSPPTTPPSPAKTDEQKKESKFLPFLTNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RKYFLDVLESDLMQFKHISSNEYIIEDSFKLLNSEQKNILLKSYKYIKESVENDIKFAQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                   NSGCFRHLDEREECKCLLNYKQEGDKCEENPNPTCNENNGGCDADATCTEEDSGSSRKKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IKKLINDDTKKDMLGKLLSTGLVQIFPN---TIISKLIEGKFQDMLNISQHQCVKKQCPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ETLYNNLVNK IDDYL I NLKAK I NDCNVEKDEAHVK I TKLSDLKA I DDK I DLFKNT NDFEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Goman,
37, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             56.1%; Score 1158; DB 2; 58.3%; Pred. No. 1.2e-53;
36.0%;
                                                   surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :
:
                                                                                                                                                                                                                                                                                                                                                                   1680
Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                   antigen
                                                                                                                                                                                                                                            28-Feb-1992 #text_change
                                                                                                                                                                                                                                                                            Plasmodium vivax
743.
.
5;
DB
2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1701;
Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      malaria
                                                                                                                                                                         of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26;
                                                                                                                                                                                                                                            24 - Nov - 1999
                                                                                                                                                                         Plasmodium vivax
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    parasite
                                                                                                                                                                                                                                                                                                                                                                                                                                   1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81
```

٤,

ġ ş 밁 Ş 밁 Ş 밁 õ

δÃ 멍 Ş В 5

밁

```
A;Reference number: A45604; MUID:92158013; PMID:1371329
A;Accession: A45604
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-1751 <GIB>
A;Cross-references: GB:M/5674; NID:g160608; PID:g457336
A;Cross-reference extracted from NCBI backbone (NCBIN:83591, C;Superfamily: major merozoite surface antigen
C;Reywords: surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 11
A45604
A4504
A4504
major blood-stage surface antigen Pv200 - Plasmodium vivax
C;Species: Plasmodium vivax
C;Date: 22-Apr-1993 #sequence_revision 18-Nov-1994 #text_change
C;Accession: A45604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Gibson, H.L.; Tucker, J.E.; Kaslow, D.C.; Krettli, A.U.; Collins, W.E.; Kiefer, M.C.; Mol. Biochem. Parasitol. 50, 325-333, 1992
A;Title: Structure and expression of the gene for Pv200, a major blood-stage surface and Reference number: A45604; MUID:92158013; PMID:1371329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity Matches 148; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1639
                                                                                                                                                                                                                                                                                                                                                                                                                    146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             39
                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                  LTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVLGYYKILSEKYKSDLD
                                                                                                                                                                                                                                                                                                                           SSSGEYIIKDPYKLLDLEKKKKLIGSYKYIGASIDMDLATANDGVTYYNKMGELYKTHLD
                        YNHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLD
                                                                  VSKVNTYTDNLKKVINNCQLEKKEAEITVKKLQDYNKMDEKLEEYKK-----
                                                                                                          NHKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTD
                                                                                                                                                     GVKTEIKKVEDDIKKQDEELKKLGNVNSQDSKKNEFIAKKAELEKYLPFLNSLQKEYESL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EPLFEGVFCS 1704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GMEEWRCLLTFKEEGGKCVPGSNVTCKDNNGGCAPEAECKMTDS----NKIVCKCTKEGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VKSSGLLEKLMKSKLIKENESKEILSQLLNVQTQLLTMSSEHTCIDTNVPDNAACYRYLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YNHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VSKVNTYTDNLKKVINNCQLEKKEAEITVKKLQDYNKMDEKLEEYKK-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NHKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AVNEEVKKVEADIKAEDDKIKKIGSDSTKTTEKTQSMAKKAELEKYLPFLNSLQKEYESL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SPSGEYIIKDPYKLLDLEKKKKLLGSYKYIGASIDKDLGTANDGVNYYNKMGELYKTHLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVLGYYKILSEKYKSDL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SDYDVVYLKPLAGMYKKIKKQLENHVNAFNTNITDMLDSRLKKRNYFLEVLNSDLNPFKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRENFKNVLESDLIPYKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ilarity 40.0%;
Conservative 6
                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                        36.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 742.5;
Pred. No. 1.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 1e-31;
7; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                        742.5; DB 2; No. 1.1e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       114;
                                                                                                                                                                                             KQGENEKYLPFLNNIETLYKTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1751;
                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBIP:83592)
                                                                                                                                                                                                                                                                                                                                                                                                                  41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24-Nov-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     41;
                                                                                                                                                                                                                                                                                                                              1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1465
                                                                                                                                                                                                 188
                                                                                                                                                                                                                                           1490
                                                                                                                                                                                                                                                                                                                                                                        86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        157
                                                                                                                                                       1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    248
R; Lewis, A.P.
MO1. Biochem. Parasitol. 36, 271-282, 1989
A;Title: Cloning and analysis of the gene encoding the A;Reference number: A45532; MUID:90014981; PMID:2797063
                                                                                    major merozoite surface antigen precursor C;Species: Plasmodium yoelli C;Date: 03-Jun-1993 #sequence_revision 03-C;Accession: A45532; A45531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; MoLecule type: DNA
A; Residues: 1-680 <BUR>
A; Residues: 1-680 <BUR>
A; Cross-references: GB: J03612; NID: g160678;
A; Experimental source: strain 17XL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Burns Jr., J.M.; Daly, T.M.; Vaidya, A.B.; Long, C.A.
Proc. Natl. Acad. Sci. U.S.A. 85, 602-606, 1988
A;Title: The 3' portion of the gene for a Plasmodium yoelii merozoite surface antigen A;Reference number: A28121; MUID:88124889; PMID:2448778
A;Accession: A28121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     major merozoite surface antigen -
C; Species: Plasmodium yoelii
                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                    ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Note: the authors translated the codon GTA for C; Superfamily: major merozoite surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Date: 30-Jun-1989 #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Accession: A28121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                               13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           429
                                                                                                                                                                                                                                                               656
                                                                                                                                                                                                                                                                                                                                                  596
                                                                                                                                                                                                                                                                                                                                                                                          316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                               VFCS
                                                                                                                                                                                                                                                                                                                                               DILSEFTNESLYVYTKRLGSTYKSLKKHMLREFSTIKEDMINGLNNKSQKRNDFLEVLSH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRENFKNVLES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTEEWRCLLTFKEEGGKCVPASNVTCKDNNGGCAPEAECKMTDS---
                                                                                                                                                                                                                                                                                                          IFCS
                                                                                                                                                                                                                                                                                                                                                                        LLNYKQ-EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDG
                                                                                                                                                                                                                                                                                                                                                                                                                                    KSGLVGEGESKKILAKML--NMDGMDLLGVDPKHVCVDTRDIPKNAGCFRDDNGTEEWRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LNYTYEKSNVEVKIKELNYLKTIQDKLADF - - - - KKNNNEVGIADLSTDYNHNNLLTKEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VYNTQLAAVKEQIATIEAETNDTNKEEKKKYIPILEDLKGLYETVIGQAEEYSEELQNRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KYKSDLDSIKKYI-------ND-KQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVLGYYKILSE 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EPLFEGVFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STGMVFENLARTVLSNLLDGNLQGM--LNIS-QHQCV-KKQCPQNSGCFRHLDEREECKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNYKNEKAEFEILTKNLEKYIQIDEKLDEFVEHAENNKHIASIA-------LNNLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ELDLFKDLSTNKYVIRNPYQLLDNDKKDKQIVNLKYATKGINEDIETTTDGIKFFNKMVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDS 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VKSSGLLEKLMKSKLIKENESKEILSQLLNVQTQLLTMSSEHTCIDTNVPDNAACYRYLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                               659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 564.5; DB 2;
Pred. No. 1e-22;
5; Mismatches 133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Plasmodium yoelii (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-Jun-1989 #text_change
                                                                                                             03-Jun-1993
                                                                                                                                                     Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PID:g160679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            residue
                                                                                                          #text_change
                        230-kilodalton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Leu
                                                                                                          26-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26-Aug-1999
                        merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         428
                                                                                                                                                                                                                                                                                                                                               655
                                                                                                                                                                                                                                                                                                                                                                                        374
                                                                                                                                                                                                                                                                                                                                                                                                                                    595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      488
```

Ş 밁 Ş B δ. 밁 Š

S В

surfa

```
Ş
                                                                                                                            A;Molecule type: mRNA
A;Residues: 1-1785 <DEL>
A;Cross-references: GB:M34947; NID:g160597; PID:g160598
C;Superfamily: major merozoite surface antigen
                                                                                                                                                                                                                                                                                                                                        major merozoite surface antigen precursor - Plasmodium chabaudi chabaudi C;Species: Plasmodium chabaudi chabaudi C;Species: 30-Sep:1993 #sequence_revision 30-Sep-1993 #text_change 26-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 454-1094 < CAL>
A; Cross-references: GB:J03975;
A; Cross-refamily: major merozoite
C; Keywords: surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Accession: A45532
A;Status: preliminary
A;Status: preliminary
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-1772 <LEW>
A;Cross-references: GB:304668; NID:g160492; PID:g160493
A;Cross-references: GB:304668; NID:g160492; PID:g160493
A;Cross-references: GB:304668; NID:g160492; PID:g160493
A;Cha:
MOL. Blochem. Parasitol. 36, 283-285, 1989
A;Title: Precursor to the major merozoite surface antigen of Plasmodium yoelii: cloning A;Reference number: A45531; MUID:90014982; PMID:2797064
A;Accession: A45531
A;Status: preliminary
                                                                                                                                                                                                                             R;Deleersnijder, W.; Hendrix, D.; Bendahman, N.; Hanegreefs, Mol. Biochem. Parasitol. 43, 231-244, 1990
A;Title: Molecular cloning and sequence analysis of the gene A;Reference number: A45546; MUID:91218805; PMID:2090945
A;Accession: A45546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                         A; Status: preliminary
                                         Best Loc
Matches
                                                                                                                                                                                                                                                                                                                              Accession: A45546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cross-references: GB:J03975; NID:g160081; PI; Superfamily: major merozoite surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                         Loca1
117;
                                                                                                                                                                                                                                                                                                                                                                                                                         14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 al Similarity 34.0
126; Conservative
   21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                92 DLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVLGYYKILSE 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         32 NILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRENFKNVLES
                                                                                                                surface antigen
                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KSGLVGEGESKKILAKML--NMDGMDLLGVDPKHVCVDTRDIPKNAGCFRDDNGTEEWRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DILSEFTNESLYVYTKRLGSTYKSLKKHMLREFSTIKEDMTNGLNNKSQKRNDFLEVLSH
AGAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFN 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNYKNEKAEFEILTKNLEKYIQIDEKLDEFVEHAENNKHIASIA--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LLGYKKGEGNTCVENNNPTCDINNGGCDPTASCQNAESTENSKKIICTCKEPTPNAYYEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LLNYKQ-EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STGMVFENLAKTVLSNLLDGNLQGM--LNIS-QHQCV-KKQCPQNSGCFRHLDEREECKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LNYTYEKSNVEVKIKELNYLKTIQDKLADF----KKNNNEVGIADLSTDYNHNNLLTKFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LYNTQLAAVKEQIATIEAETNDTNKEEKKKYIPILEDLKGLYETVIGQAEEYSEELQNRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KYKSDLDSIKKYI------ND-KQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ELDLFKDLSTNKYVIRNPYQLLDNDKKDKQIVNLKYATKGINEDIETTTDGIKFFNKMVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VFCS 1751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IFCS
                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27.48;
                                                         26.5%;
31.5%;
                                         77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75;
                                     Score 546.5; DB 2;
Pred. No. 2.7e-21;
7; Mismatches 153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 564.5; DB
Pred. No. 3e-22;
5; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PID: g160082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   133;
                                     Indels
                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                      J.; Brijs, L.; Hamers-Cast
                                                                                                                                                                                                                                                                   encoding the major merozoi
                                                                           1785;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1772;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30;
                                     25;
                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LNNLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         203
                                                   Ş
                                                                                           밁
                                                                                                                        δÃ
                                                                                                                                                                    밁
                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Gene: PFB076:
C; Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-980 <GAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Experimental source:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                       ocal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1524
                   558
                                                                                                                                                                      449
                                                                                                                                                                                                                                                 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   196
                                                                                                                              210 KSNVEV-KIKELN-----YLKTIQDKLADFKKN-----NNFVGIADLSTDYNH 251
                                                                                                                                                                                                                                                                                                                          355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      367
                                                                                                                                                                                                                                                                                    94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81
                                                                                                                                                                                                                                                                                                                                                        34 LSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRENFKNVLESDL
                                                                                                                                                                                                                                                                                                                                                                                                     88;
                                                     NNLLTKFLSTGMVFENLAKTV-LSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDER 310
                                                                                                                                                                                                                                             LEKKKCIEN---LKDELINIKKKMEDKMHMTNEMDLLSNKVE-ELNRINKT--YEKNIVE 448
                                                                                                                                                                                                                                                                                                                        VNKLQNEL-----IKRELQNKCIS----KDIEFCKKEKEDKIKN-LEDDL
                                                                                                                                                                                                                                                                                  IPYKDLTSSNYVVKDPYKFLNKEKRDK--FLSSYNYIKDSIDTDINFANDVLGYYKILSE 151
                                                                                           EQNLHVLKNEELNEKEIILKNKYDKEINMIIEQYNKKIQEEKDMLNNKI----KSMDQTH
                                                                                                                                                                                                       KYKSDLDSIKKYINDKQ--GENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKVLNYTYE
                                                                                                                                                                    -LNNELDVIKKKLNDEEFLKEEEK----KKNIDMVYKIKEYEIQ--IKEKENEIDSLKKN 501
```

```
1404 ANAOSTDEEVKDILDAFKSENEYIYTKSLGNTYKSFKKHMLKEFSMIKEDIMTGLNYKLE
                                                                                                                                                              EECKCLLNYKQ--EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSN--GKKITCECTKP
NPNAYYAGVECS 1764
                                                              DSYPLEDGIFCS 378
                                                                                                                               EEWRCLLGF KKDDDGNRCVADDAPVCNNNNGGCDKNADCREVENTDRDPSKKIVCTCKEP
                                                                                                                                                                                                                                                        ---LNNLNKSGLVTEGESKKILAKMLNMDAMDLLGIGSNHVCISTSTPDNAGCFRYDDGT 1692
                                                                                                                                                                                                                                                                                                                         NNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNI-SQHQCVKKQCPQNSGCFRHLDER
                                                                                                                                                                                                                                                                                                                                                                                           SELLQHKLENYKIEKAGFDILMANLETYIRIDEKLEDFVESAEKNKHIASIA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                         VIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADF----KKNNNFVGIADLSTDYNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DGIEFFNKMIELYKPQLNAVNEQIAAIGTEPTDAEKKKYAPIFEDLKGLYETILNGAEEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DVLGYYKILSEKYKSDLDSIKKYI-----NDKQGENEKYLPFLNNIETLYKTVNHKIDLF 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KRNDFLDVLSYELALFKDINTNKFVVKNPYQLLDNDKKDKQMINLKYAIKGVTEDIETAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KRENFKNVLESDLIPYKDLISSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDIDINFAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>:</u>
=
                                                                                                                                                                                          366
                                                                                                                                                                                                                                                                                                                             310
                                                                                                                                                                                                                                                                                                                                                                                           1635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1463
                                                                                                                                                                                                                                                                                                                                                                                                                                                         251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1583
```

R;Gardner, M.J.; Tettelin, H.; Carucci, D.J.; Cummings, L.M.; Aravind, L.; Koonin, ; Pertea, M.; Salzberg, S.; Zhou, L.; Sutton, G.G.; Clayton, R.; White, O.; Smith Science 282, 1126-1132, 1998
A;Title: Chromosome 2 sequence of the human malaria parasite Plasmodium falciparum A;Reference number: A71600; MUID:99021743; PMID:9804551
A;Accession: E71606 C;Date: 13-Nov-1998 #sequence_revision 13-Nov-1998 #text_change 21-Jul-2000 C;Accession: E71606 hypothetical protein PFB0765w - malaria parasite (Plasmodium falciparum) C;Species: Plasmodium falciparum A; Status: preliminary; nucleic acid sequence Similarity hypothetical protein MJ1322 Conservative GB:AE001417; ce: clone 3D7 8.2%; 62; Score 168.5; D Pred. No. 0.13; GB:AE001362; Mismatches not shown; NID: g3845271; DB 2; 118; Indels Length translation PIDN: AAC71942.1; PID: 9384 R.; White, O.; Smith, 91; not Gaps

. E

-MQEENKKELKRLKNVCDMNLQSQILIKENE---

KHMQEK

557

Search Job tin	Db Db
Search completed: June 11, 2003, 16:06:39 Job time : 42 secs	311 -EECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKIT 360

Run

0 1 1

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
• Listing first 45 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1192
1185.5
1174
1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          564.5
1141.5
1139.5
1139.5
1136.5
1136.5
1136.5
1136.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
1132.5
113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      %
Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-500-376-8
2063
1 MWSWKCLLFWAVLVTATLCT.....KPDSYPLFDGIFCSHHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        June 11, 2003, 16:02:30; Search time 23 Seconds (without alignments) 692.474 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       112892 segs, 41476328 residues
               SwissProt_40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                  756
455
377
11076
11113
1030
822
971
490
1169
1169
11228
2104
1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멂
       Y228_BORBU
Y032_BORBU
EX5B_BORBU
SMC_METJA
ECM_HUMAN
MY33_SCH
HUMAN
MY34_SCH
ECM_HUMAN
MY34_SCH
ECM_HUMAN
MY34_SCH
ECM_HUMAN
TEAST
RPOP_AGABT
USO1_FEAST
RMAR_CANGA
EX5B_BUCAI
                                                                                                                                                                                                                                                                                                                                                                                                           MSPL_PLAFK
MSPL_PLAFF
MSPL_PLAFF
MSPL_PLAFF
MSPL_PLAFF
MSPL_PLAFF
MSPL_PLAFF
MSPL_PLAFA
MSPL_PLAVO
FGR1_HUMAN
RA50_METJA
FGR1_MOUSE
IRR1_YEAST
IRBP_PLAVB
Y237_BUCAI
ARP_PLAFA
Y328_MYCGE
EPIC_STAEP
Y704_METJA
AFDB_ASTLO
Y1140_MYCPN
Y018_MYCCPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   112892
       P138569
P13826
P11362
Q58718
P16092
P405491
P67331
P049419
P30196
Q59196
P27059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 plasmodium
4 plasmodium
5 plasmodium
6 plasmodium
9 plasmodium
9 plasmodium
9 plasmodium
9 plasmodium
10 plasmodium
10 plasmodium
10 plasmodium
11 plasmodium
11 plasmodium
11 plasmodium
12 plasmodium
13 plasmodium
14 plasmodium
15 plasmodium
16 plasmodium
17 plasmodium
18 plasmodium
18 plasmodium
19 plasmodium
19 plasmodium
10 plasmodium
10 plasmodium
11 plasmodium
12 plasmodium
13 plasmodium
14 plasmodium
15 plasmodium
16 plasmodium
17 plasmodium
18 propplasma
18 plasmodium
18 plasmod
3 mycoplasma
3 mycoplasma
9 rattus norv
6 borrelia bu
8 borrelia bu
8 borrelia bu
7 methanococc
1 homo sapien
7 schizosacch
5 saccharomyc
6 agaricus bi
6 saccharomyc
6 candida gla
9 buchnera ap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        384
```

Result

ŏ.

Minimum | Maximum |

Searched:

4	44	43	42	41	40	39	38	37	36	35 5	34
120	120	120.5	120.5	121	121.5	121.5	121.5	121.5	122	122.5	123.5
5.8	5.8	5. 8	5.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.0
571	540	2198	1162	1783	1162	864	656	478	881	819	1956
-	1	—	<u>,,,</u>	۳	μ.	-	-	Н	μ	H	_
V096_FOWPV	YKZ6_YEAST	YLJ2_CAEEL	BXEN_CLOBO	Y468_MYCGE	BXEN_CLOBU	CHEA_BORBU	V091_FOWPV	DISR_AGKRH	LHS1_YEAST	FGR1_CHICK	ATX1_PLAFA
Q9j5c4 fowlpox vir		P34367 caenorhabdi	P46082 clostridium	Q49460 mycoplasma	Q06366 clostridium	Q44737 borrelia bu	072896 fowlpox vir	P30403 agkistrodon	P36016 saccharomyc	P21804 gallus gall	Q04956 plasmodium

ALIGNMENTS

7 7 7 7 7	11111	17.7	Y X	를 있	2 2 2	ននន	នួន	នួន	38	38	88	38	38	R R	R R	꼰	R R	₽:	2 2	R	ž Š	ရှိ ရှိ	G E		D I	17;	វីដីភ្នំ	RESULT
755 N-LINKED (GLCNAC) 759 N-LINKED (GLCNAC) 774 N-LINKED (GLCNAC) 835 N-LINKED (GLCNAC) 911 N-LINKED (GLCNAC)	1014 1030 MEMBRANE 97 97 N-LINKED 259 259 N-LINKED	20 1630 MEROZOITE 67 84 TRIPEPTIC	brane; GPI-anchor. 1 19 POTENTIAL.	1. Polyprotein: Repeat: gignal:	PIR; A2512; SA2QKI. InterPro; IPR000561; EGF-like.	3 6	ified and this statement is not removed. Usage by and for commercities requires a license agreement (See http://www.isb-sib.ch/annour	pean Bioinformatics Institute. There are no restrictions on it non-profit institutions as long as its content is in no wa	between the Swiss Institute of Bioinformatics and the EMBL outstation -	This serious party to convertable. It to produced through a collection to	ANTIGENS WHICH ARE THE MAJOR SURFACE ANTIGENS OF MATURATION TAKE PLACE DURING SCHIZONT.	-!- PTM: MEROZOITE SURFACE ANTIGEN CONTAIN THE SEQUENCE OF 83 kDa, 42	-1- SUBCELLULAR LOCATION: Attached to the membrane by a GPI-anchor	lle R., Bujard	REVISIONS, SEQUENCE FROM N.A.	Secretary as the generate teach	rsor for the major surf		COMPAN M BONG N HVAO I F COSTO I COSTO	SEQUENCE FROM N.A.	I_TaxID=5839;	Fidamodium Talciparum (1901ate Ki / Thailand). Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.		protein 1 precursor	01-0CT-1996 (Rel. 34, Last sequence update)	(Rel. 05, Created)	- 1	LT 1 PLARK

```
MSPLTI IN MSPLTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPITTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Sim
Matches 355;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MSP1_PLAFW
P04933;
13-AUG-1987
01-FEB-1996
01-FEB-1996
This SWI
between
the Euro
use by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                              (1)
SEQUENCE FROM N.A.
MEDLINE-86014355; PubMed-2995820;
MEDLINE-86014355; PubMed-2995820;
Holder A.A., Lockyer M.J., Odink
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plasmodium falciparum Eukaryota; Alveolata; NCBI_TaxID=5848;
                                                                                                                                                                                                                   Holder A.A.;
Submitted (M
                                                                                                                                                                                                                                                               REVISIONS
                                                                                                                                                                                                                                                                                                                       "Primary structure of the precursor antigens of Plasmodium falciparum me
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Merozoite
                                                                                                                                                                                                                                                                                                       Nature
                                                                                                                                                                                                                                                                                                                                                                   Freeman R.R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MSP-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Merozoite surface (PMMSA) (P195).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N
  European
by non-
                                                                                                      PTM: MEROZOITE SURFACE ANTIGEN CONTAIN THE SEQUENCE kDa AND 19 kDa ANTIGENS WHICH ARE THE MAJOR SURFACE MEROZOITES. THE MATURATION TAKE PLACE DURING SCHIZO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1253
                                                                                                                                                                                               SUBCELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1373
               SWISS-PROT entry is copyright. It is produced through
een the Swiss Institute of Bioinformatics and the EN
European Bioinformatics Institute. There are no resti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22
                                                                                                                                                                                                                                                                                                     317:270-273(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EGDKCYENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GMVFENLAKTVLSNLLDGNLQGMLNISOHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GEAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KVLNYTYEKSNVEVKIKELNYLKTIQDKLADEKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                   (MAR-1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       955
1049
1156
1165
1436
1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           955
1049
1156
1165
1436
1517
AA; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                          1991) to the EMBL/GenBank/DDBJ LOCATION: Attached to the meml
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            33,0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      91.1%;
99.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation updat
tein 1 precursor (Merc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         187289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (isolate Wellcome).
Apicomplexa; Haemos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ľ×
  as
                                                                                                                                                                                                                                                                                                                         merozoites.";
                                                                                                                                                                                                                                                                                                                                                                                       s.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1879; DB 1;
No. 4.4e-95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Haemosporida;
                                                                                                                                                                                                                                                                                                                                             ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1639
  long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Merozoite
                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                       Sandhu
Tizard
                                                                                                                                                                                            membrane
                                                                                                                                                                                                                                                                                                                                               three
                                                                                                                                                                                          J databases.
mbrane by a
                                                                                                                                                                                                                                                                                                                                                                                   M.L.V.,
  its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
                                                                                                        SCHIZONT.
                                                                                                                                                                                                                                                                                                                                           major
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                         Riveros-Moreno
                    he EMBL outstation restrictions on it
                                                                                                                                                                                                                                                                                                                                                                                       Schwarz
                                                                                                                                                                                                                                                                                                                                             surface
                                                                                                                                                OF.
                                                                                                                            ANTIGENS
                                                                                                                                                                                            GPI-anchor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      antigens)
                                                                                                                                                  83
  ŝ
                                                              a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                  kDa,
                                                                                                                              G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1609
  9
9
                                                                                                                                                                                                                                                                                                                                                                                                         ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      201
                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOUTH THE PROPERTY OF THE PROP
                                                                                                                                                                                                                                                                                                                                                                                                           밁
```

```
Query Match
Best Local S
Matches 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        modified
entities
or send a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Transmembrane;
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Malaria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; X02919; CAA26676.1; -. PIR; A24594; A24594.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
    1562
                                                                                       1502
                                                                                                                                                                            1442
                                                                                                                                                                                                                                                                1382
                                                                                                                                                                                                                                                                                                                                                     1322
                                                                                                                                                                                                                                                                                                                                                                                                                                        1262
                                            322
                                                                                                                                                                                                                     202
                                                                                                                                                                                                                                                                                                          142
                                                                                                                                                                                                                                                                                                                                                                                             82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d and this statement is not remove requires a license agreement (S an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 99.4
55; Conservative
EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                 GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                              KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                      VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                         RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Merozoite;
                                                                                                                                                                      KYLNYTYEKSNYEYKIKELNYLKTIQDKLADEKKNNNEYGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                   RENFKNYLESDLIPYKDLTSSNYVYKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPR000561; EGF-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20
268
268
764
768
783
783
1058
1165
1174
11445
1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GPI-anchor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1639
116
268
764
764
783
783
844
1058
1165
1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Polyprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           91.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            187618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1879; DI
Pred. No. 4.4e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEROŽOITE

N-LINKED (

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1879; DB 1;
No. 4.4e-95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GLCNAC.

GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          noved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IN 1.
(POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                          378
                                                                                                                             321
                                                                                                                                                                        1501
                                                                                                                                                                                                                                                             1441
                                                                                                                                                                                                                                                                                                                                                1381
                                                                                                                                                                                                                                                                                                                                                                                           141
                                                                                                                                                                                                                                                                                                                                                                                                                                      1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18
                                                                                                                                                                                                                   261
                                                                                                                                                                                                                                                                                                        201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
RESULT
MSPI_PI
ID 1_PI
AC PI
AC PI
DT 1
DT 0
DT 0
DT 0
OC OC
CRN PI
RN
RN
RN
RA
                                                                                                                                                                                                                                                                                01-MAR-1989 (Rel. 10, Last
T 01-CCT-1996 (Rel. 34, Last
Merozoite surface protein 1
(PMMSA) (P195).
                                                                                                                                                                                                                                                                                                                                                                                                                                 MSP1_PLAFC
MSP1_PLAFC
P04934;
13-AUG-1987
01-MAR-1989
01-OCT-1996
                                                                                                                                                              Plasmodium falciparum
Eukaryota; Alveolata;
NCBI_TaxID=5835;
    SEQUENCE OF 1-1103
MEDLINE-86205236; Property of the second of the secon
         Leininger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
)3 FROM N.A.
; PubMed=3517809;
inger W.M., Lyon (
                                                                                                                                                                                                                                                                                                                                                                                        , Last sequence up
, Last annotation
otein 1 precursor
                                                                                                                                                                                                                                                                  (isolate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
                                                                                                                                                                                                                     Apicomplexa;
                                                                                                                                                                                                                                                         Camp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
    J.A.;
                                                                                                                                                                                                                                                                                                                                                                                        e update)
ion update)
sor (Merozoite
                                                                                                                                                                                                                     Haemosporida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ξ
                                                                                                                                                                                                                                                                                                                                                                                                      surface
```

antigens)

```
EMBL; X03831; CAA27446.1;
PIR; A23386; SAZQGM.
InterPro; IPR000561; EGF-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBI the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fine this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Variation in the gene encoding a major merozoite surface antigen the human malaria parasite Plasmodium falciparum."; nucleic Acids Res. 14:3311-3323(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entitles requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-88143999; PubMed-3278296; Weber J.L., Sim B.K.L., Lyon J.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 1104-1726 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PTM: MEROZOITE SURFACE ANTIGEN CONTAIN THE SEQUENCE OF kDa AND 19 kDa ANTIGENS WHICH ARE THE MAJOR SURFACE AN MEROZOITES. THE MATURATION TAKE PLACE DURING SCHIZONT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION: Attached
                                                                                                                                                                                                  ite surface protein sequence from parasite Plasmodium falciparum."; Acids Res. 16:1206-1206(1988).
   GCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITC
                                     IKKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENS
                                                     IADLSTDYNHNNLLTKFLSTGMYFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCDQNS
                                                                                                           ETLYNNLVNKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNHNDFEA
                                                                                                                             ETLYKTVNHKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVG
                                                                                                                                                                               GISYYEKVLAKYKDDLESIKKVIKEEKEKFPSSPPTTPPSPAKTDEQKKESKFLPFLTNI
                                                                                                                                                                                                                                                    RKYFLDVLESDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQE
                                                                                                                                                                                                                                                                        RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                          GEAISVT-MDNILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIFTFNLNLNDILNSRLKK
                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GPI-anchor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1726
133
272
501
563
638
827
638
827
924
944
940
1016
1114
1121
1613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Polyprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                     57.8%;
59.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EGF-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         196197
                                                                                                                                                                                                                                                                                                                                                                                                  57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-LINKED
N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-LINKED
N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. 9.8(
); Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1193;
Pred. No. 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEROZOITE SURFACE PROTEIN 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DD8AD45FA352BCF3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                to the membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wolff
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (GLCNAC...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (GLCNAC. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GLCNAC. .
                                                                                                                                                                                                                                                                                                                                                                                                .8e-58;
les 74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Signal; Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                     BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Camp
                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  strain
                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL). (POTENTIAL). (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TEMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OF 83 kDa, ANTIGENS OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GPI-anchor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of.
                                                                                                                                                                                                                                                                                                                                                                                                  22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        outstation
                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                           1569
                                                                                                                                                                               1509
                                                                                                                                                                                                                                                      1449
                                                                                                                                                                                                                                                                                                                          1389
                                                                                                                                                                                                                                                                                                                                                               81
                                     1628
                                                                                                                                                                                                                  181
                                                                                                                                        MSPLIT 4

MSPLIP ID MSPLP ID MSPLAP

ID MSPL P MSPLOTO

OF 01-0CT

DT 01-0CT

CO PMMSP-1.

RA SIddid

RA SIddid

RA SIddid

RA SIddid

RA SIddid

RA SIddid

RA Exp. p

CC -1- pr

RA Exp. p

CC -1- pr

CC -1- p
 밁
                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                    Query Match
Best Local S
Matches 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MSP1_PLAFP STANDARD;
P50495;
01-OCT-1996 (Rel. 34, Last so
01-OCT-1996 (Rel. 34, Last at
01-OCT-1996 (Rel. 34, Last at
Merozoite surface protein 1 I
(PMMSA) (GP195).
                                                                                                                                                                                                                                                  CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MSP-1.

Plasmodium falciparum
Plasmodium falciparum
Purkarvota; Alveolata;
                                                                                                                                                                                                                                                                                                                                                                                                               Transmembrane; SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for con
                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Malaria; Merozoite;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; M37213; AAA29611.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        isolate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Plasmodium falciparum: gene structure and hydropathy major merozoite surface antigen (gp195) of the Uganda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           major merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Siddiqui W.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chang S.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=57270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=89005525; PubMed=3049134;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PTM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1629
1331 GEAISVT-MDNILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIFTFNLNLNDILNSRLKK 1389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEROZOITES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ΚDa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Parasitol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PF00008;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : MEROZOITE SURFACE ANTIGEN CONTAIN THE SEQUENCE OF AND 19 kDa ANTIGENS WHICH ARE THE MAJOR SURFACE AN OZOITES. THE MATURATION TAKE PLACE DURING SCHIZONT.
                                                                                      Similarity
                  GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITC 1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPR000561;
                                                                                                                                          20
133
272
501
567
638
827
924
990
1016
1114
11221
11613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kramer K.J., Yamaga K.M., Kato
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Rel. 34, Created)
                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                  GPI-anchor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: Attached to the membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67:1-11(1988).
                                                                                                                                                         1726
133
272
501
567
567
638
827
924
990
1016
1114
11114
1521
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Polyprotein; Repeat;
                                                                                   57.8%;
59.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EGF-like
                                                                                                                                            196174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Apicomplexa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (isolate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence update)
nnotation update)
surface antigens)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     378
                                                                      57;
                                                                    Score 1192; I
Pred. No. 1.1e
57; Mismatches
                                                                                                                                                         N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                 N-LINKED
                                                                                                                                                                                                                                                      N-LINKED
                                                                                                                                                                                                                                                                    N-LINKED
                                                                                                                                                                                                                                                                                       N-LINKED
                                                                                                                                                                                                                                                                                                        N-LINKED
                                                                                                                                                                                                                                                                                                                          N-LINKED
                                                                                                                                                                                                                                                                                                                                           N-LINKED
                                                                                                                                                                                                                                                                                                                                                          N-LINKED
                                                                                                                                                                                                                                                                                                                                                                              N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                               MEROZOITE
                                                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Palo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              o Alto / Uganda).
Haemosporida; Plasmodium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1726
                                                                                                                                                                                          GLCNAC...
GLCNAC...
GLCNAC...
GLCNAC...
GLCNAC...
GLCNAC...
                                                                                                                                                           (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                        (GLCNAC
                                                                                                                                                                                                                                                                                                                        (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                              (GLCNAC.
                                                                                                                                                                                                                                                                                                                                           (GLCNAC
                                                                                                                                                                                                                                                                                                                                                           (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                               SURFACE
                                                                                   DB 1;
.1e-57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Α.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ropathy profile
Uganda-Palo Alt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Case
                                                                                                                                                                                                                                                                                                                                                                                               PROTEIN 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Glycoprotein;
                                                                                                       Length 1726;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   by a GPI-anchor
                                                                                                                                                                                                                                                                                                    (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                              (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S.E.,
                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL)
                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ANTIGENS
```

a collaboration

g 00

83

42

OF.

Alto

of

Pfam;

PF00008; EGF;

Malaria; Merozoite;

malaria Nucleic

(Potential).

"Merozoite surface

Nucleic Acids [2]

밁 Ş

1510

S 밁 δÃ

1570

22;

Gaps

81

Š 밁 Ş 밁 Ş

Query Match Best Local S Matches

Similarity

SEQUENCE

8

CARBOHYD CARBOHYD CARBOHYD

CARBOHYD CARBOHYD CARBOHYD

20 133 272 501 567 638 827 924 990 1016 1114 1221

CARBOHYD CARBOHYD CARBOHYD

CARBOHYD

CHAIN

Transmembrane;

밁

```
RESULT
MSP1_PI
  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MSP1_PLAF3 STAN
P19598; Q25921;
O1-FEB-1991 (Rel. 1
O1-NOV-1997 (Rel. 3
O1-NOV-1997 (Rel. 3
                                  EMBL;
PIR; ;
                                                                                          entities
or send a
 Pfam; PF(
Malaria;
                                                                                                                                          the
                                                                                                                                                                  This
                                                                                                                                                                                                                                                               MEDIINE-95354793; PubMed-7628566;
Tolle R., Bujard H., Cooper J.A.;
"Plasmodium falciparum: variations within merozoite surface antiqen-1.";
                                                                                                                                                                                                                                                                                                                                Certa U., Rotmann D., Matile H., Reber-Liske R.; "A naturally occurring gene encoding the major surface ar precursor p190 of Plasmodium falciparum lacks tripeptide EMBO J. 6:4137-4142(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                Plasmodium falciparum Eukaryota; Alveolata; NCBI_TaxID-5834;
         InterPro; IPR000561; EGF-like Pfam; PF00008; EGF; 1.
                                                                                                                  use by non-profit institutions as long modified and this statement is not removed
                                                                                                                                                                                                                                                 merozoite surface antigen-1.";
Exp. Parasitol. 81:47-54(1995)
                                                                                                                                                                                                                                                                                                          SEQUENCE OF 1032-1682 FROM
                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-88166657;
                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 1-1061 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Merozoite
                                                                                                                                                        between
                                                                                                                                                                                                                                                                                                                                                                                                                                                     MSP-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Merozoite surface (PMMSA) (P190).
                                                                                                                                         European
                                                                                                                                                                                                                                     SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1390
                                 ; M35727; AAA29715.1; -.; Y00087; CAA68280.1; -.; Z35326; CAA84555.1; -. S06286; S06286
                                                                                                                                         SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the El
European Bioinformatics Institute. There are no rest
                                                                                                                                                                                         MEROZOITES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1629
                                                                                                                                                                                                                           (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         142
                                                                                            s requires a license agreement (See an email to license@isb-sib.ch).
                                                                                                                                                                                                   MEROZÓITE SURFACE ANTIGEN CONTAIN THE SEQUENCE OF AND 19 kDa ANTIGENS WHICH ARE THE MAJOR SURFACE ANT
  Merozoite;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IADLSTDYNHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TIXNNLVNKIDDYLINLKAKINDCNYEKDEAHVKITKLSDLKAIDDKIDLFKNHNDFDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ETLYKTVNHKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VLGYYKILSEKYKSDLDSIKKYI-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IKKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                        THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17, Created)35, Last sequence update)35, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                              PubMed=3327688;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      =
=
=
=
                                                                                                                                                                                        MATURATION TAKE
Polyprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                           (isolate ro-
Apicomplexa;
                                                                                                                                                                                                                                      Attached
                                                                                                                                                                                                                                                                                                           N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                      ro-33
 Repeat;
                                                                                                                                                                                     ARE THE MAJOR
KE PLACE DURING
                                                                                                                                                                                                                                     ç
                                                                                                                                                                                                                                                                                                                                                                                                                           Haemosporida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1682
                                                                                                                                                                                                                                                                                                                                                                                                                                      / Ghana)
                                                                                                                                                                                                                                     the membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Merozoite
Signal;
                                                                                                                                                                                                                                                                        the
                                                                                                                             mere are no restrictions as its content is in
                                                                                                                                                                                       DURING SCHIZONT.
                                                                                                       http://www.isb-sib.ch/announce/
                                                                                                                   Usage
                                                                                                                                                                                                                                                                         C-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ----NDKQGENEKYLPFLNNI
Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                            Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        surface
                                                                                                                                                                                                                                     þу
                                                                                                                   Уď
                                                                                                                                                                                                                                     þ
                                                                                                                                                                                                                                                                                                                                                      antigen
                                                                                                                   and
                                                                                                                                                     EMBL
                                                                                                                                                                                                    ANTIGENS
                                                                                                                                                                                                                                    GPI -anchor
                                                                                                                                                                                                                                                                                                                                          repeats.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        antigens)
                                                                                                                                                                                                                                                                        region
                                                                                                                                                       a collaboration - MBL outstation
                                                                                                                                                                                                                83
                                                                                                                    for
                                                                                                                                                     outstation
                                                                                                                   commercial
                                                                                                                                                                                                                                                                         0f
                                                                                                                                                                                                    엵
                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
```

```
맑
                                                       Ş
                                                                                           Š
                                                                                                                В
                                                                                                                                 Š
                                                                                                                                                       밁
                                                                                                                                                                      Q
                                                                                                                                                                                           В
                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                 ₽
밁
              δ.
                                                                            밁
                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                             SO FITTIFF FOR KW
                                                                                                                                                                                                                                                                     Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                     CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
TRANSMEM
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                               Transmembrane;
SIGNAL
                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                         Match
Local Similarity
1646
                                     1586
                                                                                                                 1467
                                                                                                                                                       1407
                                                                                                                                                                                           1347
                                                                                                                                                                                                                                 1288
                                                                           1527
                                                                                              243
                                                                                                                                   183
                 363
                                                        303
                                                                                                                                                                        142
                                                                                                                                                                                                             82
                                                                                                                                                                                                                                                   22
                                                                                                                                                                                                                                         GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                          TLYKTVNHKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGI
                                                                                                                                                     CTRPDSYPLFDGIFCS
                                             CFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCE
                                                                                    ADLSTDYNHUNTLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSG
                                                                                                                                                                                                   RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                  CTKPDSYPLFDGIFCS
                                    CFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCE
                                                                          KKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPQNSG
                                                                                                               TLYNNLVNKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNPYDFEAI
                                                                                                                                                                       VLGYYKILSEKYKSDLDSIKKYI---------NDKQGENEKYLPFLNNIE
                                                                                                                                                                                           RKYFLDVLESDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQE
                                                                                                                                                                                                                                GEAISVT-MDNILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIFTFNLNLNDILNSRLKK
                                                                                                                                                                                                                                                                                                                      20
1666
233
462
528
529
785
881
901
947
1071
1178
                                                                                                                                                                                                                                                                                                              1682
                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                          GPI-anchor
                                                                                                                                                                                                                                                                                                             A,
                                                                                                                                                                                                                                                                                                                      1682
1682
233
462
528
529
785
785
785
1071
1178
                                                                                                                                                                                                                                                                              57.5%;
                                                                                                                                                                                                                                                                                                             192462
                  378
                                                                                                                                                                                                                                                                       55,
                                                                                                                                                                                                                                                                    Score 1185.5;
Pred. No. 2.46
55; Mismatches
                                                                                                                                                                                                                                                                                                                    MEMBRANE
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
MEROZOITE
                                                                                                                                                                                                                                                                                                          LINKED (GLCNAC...)
CB2A1E159948CAD6
                                                                                                                                                                                                                                                                                                                                                                                                                             ANCHOR
                                                                                                                                                                                                                                                                                                                                                                                                          (GLCNAC. .
                                                                                                                                                                                                                                                                                                                                                                                                                                        SURFACE
                                                                                                                                                                                                                                                                 ,;
,.4e-57;
76;
                                                                                                                                                                                                                                                                                        DВ
                                                                                                                                                                                                                                                                                                                                                                                                                             (POTENTIAL)
                                                                                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                                                                                                                                                                                                                       PROTEIN 1.
                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                             CRC64;
                                                                                                                                                                                                                                                                                                                             (POTENTIAL)
                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                         1682;
                                                                                                                                                                                                                                                                      21;
                                                                                                                                                                                                                                                                     Gaps
                                                                                                                1526
                                                                          1585
                                                                                                                                                     1466
                                                                                                                                                                                                                                                   81
                                                       362
                                                                                             302
                                                                                                                                                                        182
                                                                                                                                                                                                            141
```

```
RESPLET IN MSEPLET ID MSEPLET ID MSEPLET IN 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JAN-1990
01-JAN-1990
01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Merozoite (PMMSA).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MSP1_PLAFF
P13819;
                                                                     SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE-88142999; PubMed-2449612;
Peterson M.G., Coppel R.L., McIntyre P., I
Brown G.V., Anders R.F., Kemp D.J.;

Porilation in the precursor to the major n
of Plasmodium falciparum.";

Mol. Biochem. Parasitol. 27:291-302(1988)
                                                                                                                                                                                                                                                                                                                                                                      Plasmodium falciparum Eukaryota; Alveolata; NCBI_TaxID=5837;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PLAFF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MSP-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 σ
                                          SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               990 (Rel.
990 (Rel.
996 (Rel.
surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence update)
Last annotation updat
tein 1 precursor (Merc
                                                                                                                                                                                                                                                                                                                                                                                                            (isolate FC27 Apicomplexa; |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                                      Attached
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                      6
                                                                                                                                                                                                                                                                                                                                                                                                        / / Papua New Guinea).
Haemosporida; Plasmodium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1701
                                      the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               update)
(Merozoite
                                                                                                                                                  merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                       Langford C.J.,
                                      membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  surface
                                      γģ
                                                                                                                                                  surface
                                      ω
                                      GPI-anchor
                                                                                                                                                                                                                           Woodrow
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  antigens)
                                                                                                                                                  antigens
```

```
RESULT 7
MSP1_PLAFM
ID MSP1_P
AC P08569
DT 01-AUG
                                                                       밁
                                                                                   Ş
                                                                                                            밁
                                                                                                                           δÃ
                                                                                                                                                 В
                                                                                                                                                                     Qy
                                                                                                                                                                                           밁
                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 221
MSP1_PLAFM
P08569;
01-AUG-1988
                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Piam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PIR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Malaria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro;
                                                                                                                                                     1545
                                                                                                                                                                                             1485
                                                                                                                                                                                                                                    1425
                                                                                                                                                                                                                                                                           1365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PTM: MEROZOITE SURFACE ANTIGEN CONTAIN THE SEQUENCE OF 83 kD: kDa AND 19 kDa ANTIGENS WHICH ARE THE MAJOR SURFACE ANTIGENS MEROZOITES. THE MATURATION TAKE PLACE DURING SCHIZONT.
                                                                                                                                                                                                                                                                                                                    1306
                                                                        1664
                                                                                                              1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A54498;
                                                                                         362
                                                                                                                                302
                                                                                                                                                                       242
                                                                                                                                                                                                               182
                                                                                                                                                                                                                                                       142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PF00008; EGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 M19143; AAA29653.1;
                                                                                                                                                                                                                                                                                               82
                                                                                                                                                                                                                                                                                                                                       22
                                                                                                                                                                                                                                                                                                                                                            221;
                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                               GAISVT-MONILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIITFNLNLNDILNSRLKK
                                                                                                                                                                                                                                                                                                                           GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                      ETLYKTVNHKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVG
                                                                                                                                                                                                                                  GISYYEKVLAKYKDDLESIKKVIKEEKEKFPSSPPTTPPSPAKTDEQKKESKFLFFLTNI
                                                                                                                                                                                                                                                                                     RENFKNYLESDLIPYKDLTSSNYYVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                      ECTKPDSYPLEDGIFCS
                                                                                GCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADATCTEEDSGSSRKKITC
                                                                                                                      GCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITC
                                                                                                                                                  IKKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENS
                                                                                                                                                             IADLSTDYNHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNS
                                                                                                                                                                                          ETLY NNLVNKIDDY LI NLKAK I NDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNTNDFEA
                                                                                                                                                                                                                                                       VLGYYKILSEKYKSDLDSIKKYI-----
                                                                                                                                                                                                                                                                         RKYFLDVLESDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Merozoite; Polyprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1PR000561; EGF-like.
                                                                                                                                                                                                                                                                                                                                                                                                 1
20
110
239
470
536
607
802
899
919
965
991
1089
1196
1588
 (Rel.
                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GPI-anchor
                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                  $
 08, Created)
                                                                                                                                                                                                                                                                                                                                                                                                          1701
110
239
470
536
607
802
899
919
965
919
965
11089
                                                                                                                                                                                                                                                                                                                                                                   56.9%;
                                                                                                                                                                                                                                                                                                                                                                                                  193719
                                                                      1680
                                                                                                                                                                                                                                                                                                                                                           58;
                                                                                                                                                                                                                                                                                                                                                                                                  ¥.
                                                                                                                                                                                                                                                                                                                                                                                                        ALLINEED

N-LINKED

N-LINKED

N-LINKED

N-LINKED

N-LINKED

N-LINKED

N-LINKED

N-LINKED

N-LINKED

N-LINKED
                                                                                                                                                                                                                                                                                                                                                                   Score 1174;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POTENTIAL
                    PRT;
                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                INKED (GLCNAC. .
INKED (GLCNAC. .
3920875E73D38552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Repeat;
                    1701
                                                                                                                                                                                                                                                                                                                                                                                                                                              (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                       (GLCNAC. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GLCNAC. .
                                                                                                                                                                                                                                                                                                                                                                  4; DB
1e-56;
                                                                                                                                                                                                                                                                                                                                                                                                                               (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SURFACE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Signal;
                    A
                                                                                                                                                                                                                                                                                                                                                                            1;
                                                                                                                                                                                                                                                                                                                                                          76;
                                                                                                                                                                                                                                                       ----NDKQGENEKYLPFLNNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROTEIN
                                                                                                                                                                                                                                                                                                                                                                            Length 1701;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                       (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                          22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      collaboration
                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        42
                                                                                                                                                                                                                                                                                                                 1364
                                                                                                                                                                                                                                  1484
                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                         1424
                                                                                                                                                   1603
                                                                                                                                                                                          1544
                                                                                                                               361
                                                                                                                                                                      301
                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                             141
                                                                                                                                                                                                                                                                                                                                      81
                                                                                                                                                                                                                                                                                                                                                          w
        밁
                           Ş
                                                                                        Query Match
Best Local S
Matches 221
                                                                                       CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                    CARBOHYD
CARBOHYD
                                                                                                                                         CARBOHYD
CARBOHYD
                                                                                                                                                             CARBOHYD
CARBOHYD
                                                                                                                                                                                                              CARBOHYD
CARBOHYD
                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                            the European Bioinformatics Institute. There are no restrictions on model by non-profit institutions as long as its content is in no modified and this statement is not removed. Usage by and for commentential contents and successful commentents and successful commentents.
                                                                                                                                                                                                                                                                                                                                                                                               This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Allelic dimorphism in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plasmodium falciparum Eukaryota; Alveolata; NCBI_TaxID-70153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-MAY-2000 (Rel.
30-MAY-2000 (Rel.
Merozoite surface
                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                           SIGNAL
                                                                                                                                                                                                                                                      Transmembrane;
                                                                                                                                                                                                                                                               Malaria;
                                                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                      or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                       ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plasmodium falciparum mero
EMBO J. 4:3823-3829(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Stunnenberg H., Bujard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tanabe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Plasmodium falciparum.";
T. Mol. Biol. 195:273-287(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. MEDLINE=88011243;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MSP-1.
                                                                                                                                                                                                                                                                           Piam;
                                                                                                                                                                                                                                                                                                                                                                                      between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mackay M., Goman M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 1-115 FROM N.A. MEDLINE=86136024; PubMed=3004972.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REVISIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (JAN-1999) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (PMMSA) (P190).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Polymorphism of the precursor for the lasmodium falciparum merozoites: studi
                                                                                                                                                                                                                                                                                                                                                                                                                PTM: MEROZOITE SURFACE ANTIGEN CONTAIN THE SEQUENCE OF 83 kDa kDa AND 19 kDa ANTIGENS WHICH ARE THE MAJOR SURFACE ANTIGENS MEROZOITES. THE MATURATION TAKE PLACE DURING SCHIZONT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                (Potential).
                                                                                                                                                                                                                                                                                            A26868; A26868.
B25120; B25120.
                                                                                                                                                                                                                                                                                                                                                                                    SWISS-PROT entry is copyright. It is produced through a centre the Swiss Institute of Bioinformatics and the EMBL
                                                                                                                                                                                                                                                                        PF00008; EGF;
                                                                                                                                                                                                                                                                                                                 X05624; CAA29112.1;
                            22
                                                          Similarity
                   GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTENVNVKDILNSRFNK
       GEAISVT-MDNILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIITFNLNLNDILNSRLKK 1364
                                                                                                                                                                                                                                                             Merozoite; Polyprotein;
                                                                                                                                                                                                                                                                                    IPR000561;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TO 1403;
                                                                                        110
239
239
470
536
607
802
899
919
919
919
11089
11196
                                                Conservative
                                                                                                                                                                                                                                                     GPI-anchor
                                                                                        ξ.
                                                                                                     .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PubMed=3079521;
                                                                                                1701
110
239
470
536
607
802
899
919
965
11089

    Last sequence update)
    Last annotation update)
    protein 1 precursor (Merozoite)

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1569
                                                          56.9%;
                                                                                                                                                                                                                                                                                    EGF-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bone N., Hyde J.E.,
                                                                                        193768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Η.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (isolate mad20 / Papua New Apicomplexa; Haemosporida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Attached
                                               58;
                                                                                        MW;
                                                                                               GANIT-N
                                              Score 1174; DB Pred. No. 1e-56; Mismatches
                                                                                                                                                                                                               N-LINKED
                                                                                                                                                                                                                       N-LINKED
                                                                                                                                                                                                                                   MEROZOITE
                                                                                                                                                                                                                                           POTENTIAL
                                                                                                                                                                                                                                                              Repeat;
                                                                                        3FC2EC59AF96EA98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            r the major studies at
                                                                                                                                                                                                                                                                                                                                                                                                                                                         to the membrane
                                                                                               (GLCNAC.
                                                                                                                                                                                                              (GLCNAC:
                                                                                                                                                                                                                                                                                                                                             moved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4
                                                                                                                                                                                                                                   SURFACE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                             Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scaife J.,
                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           surface antigens of
the genetic level.";
                                               76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    databases
                                                                                                                                                                                                                                 PROTEIN 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                                                             Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Guinea).
Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  surface antigens)
                                                                 Length 1701;
                                               Indels
                                                                                        CRC64;
                                                                                              (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                         γď
                                                                                                                                                                                        (POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Certa
                                                                                                                                                                                                                       (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              malaria parasite
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         GPI-anchor
```

а ;

a collaboration -

its

kDa,

42

OF.

22;

Gaps

```
RESULT
MSP1_PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
         EMBL; J03612;
EMBL; J04668;
PIR; A28121; A
PIR; A45532; A
                                                                                                                     This
                                                                    entities
                                                                                                 the
                                                                                                                                                                                                                                                                              Mol.
                                                                                                                                                                                                                                                                                                                                                                                                         01-JAN-1990 (Rel.
01-JAN-1990 (Rel.
01-OCT-1996 (Rel.
                                                          or send an
                                                                             modified
                                                                                                                                                                                                          antigen encodes
                                                                                                                                                                                                                      "The
                                                                                                                                                                                                                                                 STRAIN-17XL;
                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. MEDLINE-90205979;
                                                                                                                                                                                                                               Burns
                                                                                                                                                                                                                                         MEDLINE-88124889;
                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID-5862;
                                                                                                                                                                                                                                                                                                                                                          Plasmodium berghei yoe
Eukaryota; Alveolata;
                                                                                                                                                                                                                                                                                                                                                                               MSP-1
                                                                                                                                                                                                                                                                                                                                                                                                 Merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                       P13828;
                                                                                                                                                                                                                                                                                                                                                                                                                                               MSP1_PLAYO
                                                                                                                                                                                        Proc.
                                                                                                                                                                                                                                                                                                            Lewis
                                                                                                                                                                                                                                                                                                                                                                                       (PMMSA) (230
                                                                                                                                                                                                                                                                                                 Sequence analysis upstream of the
                                                                                                European Bioinformatics Institute.
                                                                                                                                      PTM: MEROZOITE SURFACE ANTIGEN CONTAIN THE SEQUENCE OF kDa AND 19 kDa ANTIGENS WHICH ARE THE MAJOR SURFACE AN MEROZOITES. THE MATURATION TAKE PLACE DURING SCHIZONT.
                                                                                                                                                                              SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1604
                                                                                                                                                                                                                      ų
                                                                                                        SWISS-PROT entry is copyright. It is produced through a collaboration en the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                      (Potential)
                                                                                                                                                                                                                                                                               Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          142
                                                                                                                                                                                                                                                                                                           A.P.;
                                                                                                                                                                                                                              J.M. Jr.,
                                                                                                                                                                                       Natl. Acad. Sci.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82
                                                                                                                                                                                                                                                                                                                                                                               ., (kel. 13, Creatu
1990 (Rel. 13, Last s
1996 (Rel. 34, Last au
e surface protein 1 p
(230 kDa).
                                                                                                                                                                                                                    portion
                                                         non-profit institutions as long as its content is in no way and this statement is not removed. Usage by and for commercial requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                            OF 1093-1772 FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ECTKPDSYPLFDGIFCS
ECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IADLSTDYNHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ETLYNNLYNKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNTNDFEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GISYYEKVLAKYKDDLESIKKVIKEEKEKFPSSPPTTPPSPAKTDEQKKESKFLPFLTNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VLGYYKILSEKYKSDLDSIKKYI----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Merozoite;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADATCTEEDSGSSRKKITC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IKKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ETLYKTVNHKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVG
           A45532.
                    A28121.
                            AAA29762.1;
AAA29702.1;
                                                                                                                                                                                                                                                                             Parasitol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                         9; PubMed=2448778;
Daly T.M., Vaidya A.B., Long
of the gene for a plasmodium
the epitope recognized by a p
                                                                                                                                                                                                                                                                             surface antigens of Plasmo
arasitol. 39:285-288(1990).
                                                                                                                                                                                                                                                                                                                    PubMed-2320061;
                                                                                                                                                                                                                                                                                                                                                                   yoelii.
Polyprotein;
                                                                                                                                                                                                                                                                                                                                                          Apicomplexa;
                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                       ₫
                                                                                                                                                                                       S.A. 85:602-606(1988)
                              .' .'
                                                                                                                                                                               Attached
                                                                                                                                                                                                                                                           N.A.
                                                                                                                                                                                                                                                                                                                                                                                               sequence update)
annotation update)
1 precursor (Merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   378
                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                      of Plasmodium
 Repeat;
                                                                                                                                                                               ខ
                                                                                                                                                                                                                                                                                                                                                          Haemosporida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                1772
                                                                                                                                                                               the
                                                                                                There are no restrictions
                                                                                                                                                                                                                                                                                                  encoding
 Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                A
                                                                                                                                                                               membrane
                                                                                                                                                                                                          protective
                                                                                                                                                                                                                              C.A.;
                                                                                                                                                                                                                   yoelii merozoite surface
                                                                                                                                                                                                                                                                                       yoelii.
                                                                                                                                                                                                                                                                                                  the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----NDKQGENEKYLPFLNNI
 Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                surface
                                                                                                                                                                                                                                                                                                                                                           Plasmodium
                                                                                                                                                                              γď
                                                                                                                                                                                                                                                                                         precursor
                                                                                                                                                                              þ
                                                                                                                                                                                                          monoclonal
                                                                                                                                                          ç
                                                                                                                                                ANTIGENS
                                                                                                                                                                              GPI-anchor
                                                                                                                                                                                                                                                                                                                                                                                                antigens)
                                                                                                                                                          83
                                                                                                          collaboration
                                                                                                                                                                                                                                                                                                  ៥
                                                                            in no way commercial
                                                                                                                                                 S.
                                                                                                                                                                                                                                                                                                  the
                                                                                                                                                          42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1603
                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                   닭
                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                         ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
```

```
RESULT
FGR1_HD
ID FGR1_HD
AC P1
AC P1
DT 011
DT 011
DT 15
DE Ba
DE FG
GN FG
GN FG
GN FG
GN FG
GN FG
RT II
RT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 126
                                                                                                                                                                                                                                rGR1_HUMAN
p11362; p17049;
01-UUL-1989 (Rel. 11, Created)
01-WAY-1991 (Rel. 18, Last sequence update)
01-MAY-1991 (Rel. 14, Last annotation update)
15-JUN-2002 (Rel. 41, Last annotation update)
Basic fibroblast growth factor receptor 1 precursor (EC PRGFR-1) (bFGF-R) (Fms-like tyrosine kinase-2) (c-fgr).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
CARBOHYD
Isacchi A., Bergonzoni L., Sarmientos F
"Complete sequence of a human receptor
fibroblast growth factors.",
Nucleic Acids Res. 18:1906-1906(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Transmembrane; SIGNAL
                                                                                                                                                                                      Mammalia; Eutheria;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                   SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                       MEDLINE-90245600; PubMed-2159626;
                                                                                                                                 rissue=Placenta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      il Similarity
126; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KSGLVGEGESKKILAKML--NMDGMDLLGVDPKHVCVDTRDIPKNAGCFRDDNGTEEWRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STGMVFENLAKTVLSNLLDGNLQGM--LNIS-QHQCV-KKQCPQNSGCFRHLDEREECKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LYNTQLAAVKEQIATIEAETNDTNKEEKKKYIPILEDLKGLYETVIGQAEEYSEELQNRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KYKSDLDSIKKYI-----ND-KQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ELDLFKDLSTNKYVIRNPYQLLDNDKKDKQIVNLKYATKGINEDIETTTDGIKFFNKMVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVLGYYKILSE
:| :|||: || : ||: : : : : |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DILSEFTNESLYVYTKRLGSTYKSLKKHMLREFSTIKEDMTNGLNNKSQKRNDFLEVLSH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNKRENFKNVLES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LLGYKKGEGNTCVENNNPTCDINNGGCDPTASCQNAESTENSKKIICTCKEPTPNAYYEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LNYTYEKSNVEVKIKELNYLKTIQDKLADF - - - - KKNNNFVGIADLSTDYNHNNLLTKFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LLNYKQ-EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNYKNEKAEFEILTKNLEKYIQIDEKLDEFVEHAENNKHIASIA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1018
1090
1408
1446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1541
1629
1680
1521
1772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              406
646
829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                   z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GPI-anchor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ă,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1772
54
646
646
629
1018
11408
11446
11541
15629
15880
                                                                                                                                                                                                                 Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 564.5;
Pred. No. 1.6e
75; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL.
MEROZOITE
                                                                                                                                                                                                               Craniata; Vertebrata; Catarrhini; Hominidae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ÿ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9A6291658EB0F45D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              H
                                                                                     P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (GLCNAC.
                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SURFACE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 6e-
                                                                                                                                                                                                                 Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                               acidic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                       Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL)
                                                                                                                                                                                                                                                                                                                          2.7.1.112)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LUNLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9;
```

```
MEDLINE-91126480; PubMed-184
Hou J., Kan M., McKeehan K.,
"Fibroblast growth factor re
structural domains.";
Science 251:665-668(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-90290512; PubMed-Zluzu,, MEDLINE-90290512; PubMed-Zluzu,, MEDLINE-90290512; PubMed-Zluzu,, MEDLINE-90290512; PubMed-Zluzu,, MEDLINE-90290512; PubMed-Zluzu,, Med. Seo M.K.; Itoh N., Terachi T., Ohta M., Seo M.K.; Proper deduced from its cDW fibroblast growth factor receptor deduced from its cDW manner. Biophys. Res. Commun. 169:680-685(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ruta M., Burgess W.H., Jaye M., Schlessinger J.; "Cloning and expression of two distinct high-affinity cross-reacting with acidic and basic fibroblast growth EMBO J. 9:2685-2692(1990).
                                                                                                                                        "A novel c-fgr exon utilized in Epstein-Barr lymphocytes but not in normal monocytes."; Mol. Cell. Biol. 11:1500-1507(1991).
                                                                                                                                                                                               Gutkind S.J., Link D.C., Robbins K.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                    Ruta M., Howk R., Ricca G., Drohan W., Zabelshansky M., Barton D.E., Francke U., Schlessinger J., Givol D.; "A novel protein tyrosine kinase gene whose expression during endothelial cell differentiation.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kiefer M.C., Baird A., George-Nascimento C., Nguyen T., Masor
Boley L.J., Valenzuela P., Barr P.J.;
"Molecular cloning of a human basic fibroblast growth factor
"DNA and expression of a biologically active extracellular de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. MEDLINE-92118399;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shimotohno K.,
"K-sam-related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dionne C.A., Crumley G.R., Bellot Ruta M B....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A TISSUE-Neonatal b MEDLINE-90360977;
Eisemann A., Ahn J.A., Graz
"Alternative splicing gener
the human basic-FGF recepto
Oncogene 6:1195-1202(1991)
                                                                                                                                                                                                                                      MEDLINE-91141499;
                                                                                                                                                                                                                                                                                                                                                              MEDLINE=90355989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cancer Res.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hattori Y.,
                                                                                                                                                                                                                                                                                                                                Diverse
                                                                                                                                                                                                                                                                                                                                               Johnson D.
                                                                     TEDLINE-91319400;
                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA and expression of baculovirus system."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                i Y., Odagiri H., Katoh O., Sakamoto H., Ohno K., Tobinai K., Sugimura T., Terada -related gene, N-sam, encodes fibroblast expressed in T-lymphocytic tumors."; Res. 52:3367-3371(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Factors
                                                                                                                                                                                                                                                                                                                                                                                   FROM N.A.,
                                                                                                                                                                                                                                                                                                                                Suroj
                                                                                                                                                                                                                                                                                           Biol.
                                                                                                                                                                                                                                                                                                                 NA., AND ALTERNATIVE S. 75989; PubMed=2167437; Lee P.L., Lu J., w''' is of a reconstruction.
                                                                                                                                                                                                                                                     SPLICING
                                                                                                         N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5:115-127(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       brain
                                                                                                                                                                                                                                                                                       10:4728-4736(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PubMed=1317750;
                                                                       PubMed=1650441;
                                                                                                                                                                                                                                    PubMed-1847500;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PubMed=1662973;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PubMed=1846977;
EKeehan K., McBride
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FROM
                                                                                                          AND
                  generates
eceptor.*;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       stem;
                                                                                                          ALTERNATIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N.A.
                                                                                                                                                                                                                  Katamine S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          receptors
                                                                                                                                                                                                                                                                                                                   o., Williams .
                                   at
                                   least
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        e G.,
                                 Tronick S.R.,
least five dif
                                                                                                          SPLICING
                                                                                                                                                                                                                                                                                                                                                                               SPLICING
                                                                                                                                                                                                                  Lacal
                                                                                                                                                                                                                                                                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Adams
liver
                                                                                                                                                                                                            ₽.,
                                                                                                                                                                                                                                                                                                                           basic
                                                                                                                                                                              virus-infected
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , Morita T.,
a M.;
t growth factor :
                                 .R., Ron D.;
different isoforms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P., N
                                                                                                                                                                                                                  Miki
                                                                                                                                                                                                                                                                                                                         fibroblast growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               orm of human basic cDNA.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           McKeehan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searfoss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                receptors
                                                                                                                                                                                                                                                                                                                                                                                                                                                      is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               factors.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Laureys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mason
                                                                                                                                                                                                                Ley T.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                      modulated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Σį
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        G.,
                                   e
f
```

```
This SWISS-PROT entry is copyright. It is produced through a collable between the Swiss Institute of Bioinformatics and the EMBL outsithe European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for contential modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X-RAY CRYSTALLOGRAPHY (2.4 ANGSTROMS) OF MEDILINE-97284786; PubMed-9139660; Mohammadi M., McMahon G., Sun L., Tang C. Hubbard S.R., Schlessinger J.; Structures of the tyrosine kinase domain receptor in complex with inhibitors."; Science 276:955-960(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       turnover and Ca2+ flux but not mitogenesis.";
Nature 358:678-681(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VARIANT PFEIFFER SYNDROME ARG-252.

MEDLINB-95179173; PubMed-7874169;
Muenke M., Schell U., Hehr A., Robin N.H., Losken H.W., Schinzel
Pulleyn L.J., Rutland P., Reardon W., Malcolm S., Winter R.M.;
"A common mutation in the fibroblast growth factor receptor 1 gen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-96361355; PubMed-8752212; Mohammadi M., Schlessinger J., Hubbard S "Structure of the FGF receptor tyrosine autoinhibitory mechanism.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfeiffer syndrome."
Nat. Genet. 8:269-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=92357145; Pubme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Peters K.G., Marie J., Wilson E., 1 del Rosario M., Mirda D., Williams "Point mutation of an FGF receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X-RAY CRYSTALLOGRAPHY (2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Point mutation in FGF receptor eliminates hydrolysis without affecting mitogenesis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mohammadi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MUTAGENESIS OF TYR-766.
MEDLINE=92357144; PubMed=1379697;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wennstroem
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nature 358:681-684(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHARACTERIZED BY CRANIOSYNOSTOSIS (PREMATURE FUSION OF THE SKULL SUTURES) WITH DEVLATION AND ENLARGEMENT OF THE THUMS AND GREAT TOES, BRACHYMESORHALANOY, WITH PHALANGEAL ANKYLOSIS AND AVAYING DEGREE OF SOFT TISSUE SYNDACTYLY.

DISEASE: Involved in a t(8;13)(p12;q12) chromosomal translocation which involved in a t(8;13)(p12;q12) chromosomal translocation which involves FGFR1 AND ZNF198. The resulting transcript is a possible candidate for stem cell leukemia lymphoma syndrome/SCIL.

SIMILARITY: BELONGS TO THE FIBROBLAST GROWTH FACTOR RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lifter Synatome., Genet. 8:274(1994).

Genet. 8:262774(1994).

FUNCTION: RECEPTOR FOR BASIC FIBROBLAST GROWTH FACTOR. A SHORTEI FUNCTION. RECEPTOR COULD BE A RECEPTOR FOR ACLDIC FGF (AFGF).

FORM OF THE RECEPTOR COULD BE A RECEPTOR FOR ALL FOR AL
                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY: CONTAINS 3 IMMUNOGLOBULIN-LIKE C2-TYPE DOMAINS.
DATABASE: NAME-Atlas Genet. Cytogenet. Oncol. Haematol.;
WWW-"http://www.infobiogen.fr/services/chromcancer/Genes/FGFR1113.html"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tyrosine phosphate.
SUBCELLULAR LOCATION: Type I membrane protein.
ALTERNATIVE PRODUCTS: MANY FORMS OF FGFR1 ARE PRODUCED BY
ALTERNATIVE SPLICING. THE FORM SHOWN HERE IS KNOWN AS ALPHA-
DISEASE: DEFECTS IN FGFR1 ARE ONE OF THE CAUSES OF PFEIFFER
SYNDROME (FS) (ALSO KNOWN AS ACROCEPHALOSYNDACTYLY TYPE V; F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         86:577-587(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Schlessinger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     m S., Sandstroem (JUL-1990) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dionne
CAA36101.1;
CAA37015.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=1379698;
nne C.A., Li W.,
                                                                                                                     license agreement (
license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                m C., Claesson-Welsh I
the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ANGSTROMS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  kinase domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hubbard S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ives
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ဓ္
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Z
,
                                                                                                                                                            (See http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                c.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                H.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       kinase domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .₩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 464-762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       464-762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Spivak T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        phosphatidylinositol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hirth P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fibroblast growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              phosphatidylinositol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Escobedo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yeh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Honegger A.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       reveals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AS ALPHA-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B.K.,
                                                                                                                                                                                                                                                                                                                                         a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       þ
                                                                                                                                                                                                                                                                                                                                outstation
                                                                                                                                                            ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACS5);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A.,
                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in
                                                                                                                                                                                                                                              way
```

```
RA50
 OSCHOOL
                                                                                                    몽
                                                                                                                  Ş
                                                                                                                                  밁
                                                                                                                                                  δÃ
                                                                                                                                                                   밁
                                                                                                                                                                                Š
                                                                                                                                                                                                  B
                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                    RESULT 10
                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 76
               RA50_METJA STAN

Q58718;

16-OCT-2001 (Rel. 4

16-OCT-2001 (Rel. 4

16-OCT-2001 (Rel. 4

DNA double-strand b
                                                                                                                                                                                                                                                                                                                                         PRINTS; PR00109; TYRKINASE.
ProDom; PD000001; Euk_pkinase;
SMART; SM00408; IGc2; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
 Methanococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL;
          RAD50 OR MJ1322
                                                                                                                                                                                                                                                                                                                                                                           Pfam;
                                                                                                                                                                                                                                                                                                                                                                    Pfam;
                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                           InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                   InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S11692;
S25420;
S26739;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          M34185; AAA35836.1;
M34186; AAA35837.1;
X57118; CAAA0400.1;
X57119; CAAA0401.1;
X57120; CAAA0402.1;
X57121; CAAA0403.1;
X57121; CAAA0404.1;
X57123; CAAA044.1;
X57124; CAAA048.1;
                                                                                                                                                                                                                                                                                                                                                                                                                    101600;
                                                                                                                                                    173
                                                                                                    284
                                                                                                                    219
                                                                                                                                    228
                                                                                                                                                                    177
                                                                                                                                                                                   123
                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1FGI; 08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           X66945;
Y00665;
M37722;
M60485;
                                                                                                                                                                                                                                                                                                                                                                  PF00069; pkinase; 1
                                                                                                                                                                                                                   74
                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                    35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     M63887
                                                                                                                                                                                                                                                                  L
                                                                                                                                                                                                                                                                                                   76;
                                                                                                                                                                                                                                                                                                                                                                                                                                   HGNC: 3688;
                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                    QPHIQWLKHIE
                                                                                                                                                                                                                                                                IPR000719;
IPR003006;
IPR003598;
                                                                                                                   --ELNYLKTIQ
                                                                                                                                                   KYLPFLNNIETLYKTVNHKIDLFVIH------LEAKV-LNYTYE-KSNVEVKIK-----
                                                                                                                                                                   KCPSSGTPNPTLRWLKNGKE----FKPDHRIGGYKVRYATWSIIMDSV--
                                                                                                                                                                                                  ALPSSEDDDDDDDSSSEE----KETDNTKPNRMPVAPY-WTSPEKMEKKLHAVPAAKTVKF
                                                                                                                                                                                                                  ILNSRFNKRENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFL------
                                                                                                                                                                                                                                 VQSINWLRDGVQLAESNRTRITGEEVEVQDSVPADSGLYACVTSSPSGSDTTYFSVNVSD
                                                                                                                                                                                                                                                                                                                                                                                   IPR001245;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-JUL-97.
08-APR-98.
                                                                                                                                   -YTCIVENEYGSINHTYQLDVVERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDP
                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S26739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAA47375
CAA68679
AAA75007
 jannaschii.
                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                  TyrKc;
                 break
                         40,
                                                                                                                                                                                  SSYNYIKDSIDTDINFAND-VLGYYKILSEKYKSDLDSIKKYINDKQGENE
                                                                                                                                                                                                                                                                                                                                                                                                                                    FGFR1.
                                                                                                                                                                                                                                                                                                         6.98;
                                                                                                                                                                                                                                                                                                                                                                                  Ig_c2.
Tyr_pkinase.
                                                                                                    294
                                                                                                                   227
                                                                                                                                                                                                                                                                                                                                                                                                  Euk_pkinase
Ig_MHC.
                        Last sequence update)
Last annotation updat
                                         Created)
                  repair
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -.
-.
-.
-.
ALT_TERM.
                                                                                                                                                                                                                                            -SKIE-NEYEVLYLKPL-AGVYRSLKKQLENNVMT-FNVNVKD
                                                                                                                                                                                                                                                                                                         Score 141.5; 1
Pred. No. 0.7;
                                                                                                                                                                                                                                                                                                  Mismatches
                 n update)
ATPase.
                                                          1005
                                                         ₿
                                                                                                                                                                                                                                                                                                                  몂
                                                                                                                                                                                                                                                                                                  93;
                                                                                                                                                                                                                                                                                                                  Ļ
                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                   822;
                                                                                                                                                                                                                                                                                                 101;
                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                  172
                                                                                                                                                                                                                                 120
                                                                                                                                                   218
                                                                                                                                                                                                  176
                                                                                                                                                                                                                                                  73
                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                 34
S
```

```
밁
                                                                                                      Ş
                                                                                                                                                          밁
                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 6.9%;
Best Local Similarity 22.4%;
Matches 86; Conservative 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ProDom; PD00006; ABC_transportr; 1.
DNA repair; Hydrolase; ATP-binding.
NP_BIND 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bult C.J., White O., Olsen G.J., Zhou L., Fleischmann R.D., Sutton G.G., Blake J.A., FltzGerald L.M., Clayton R.A., Gocayne J.D., Kerlavage A.R., Dougherty B.A., Tomb J.F., Adams M.D., Reich C.I., Overbeek R., Kirkness E.F., Weinstock K.G., Merrick J.M., Glodek A., Scott J.L., Geoghagen N.S.M., Weidman J.F., Fuhrmann J.L., Nguyen D., Utterback T.R., Kelley J.M., Peterson J.D., Sadow P.W., Hanna M.C., Cotton M.D., Roberts K.M., Hurst M.A., Kaine B.P., Borodovsky M., Klenk H.-P., Fraser C.M., Smith H.O., Woese C.R., Venter J.C., Klenk H.-P., Fraser C.M., Smith H.O., Woese C.R., Venter J.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF02463; SMC_N; Pfam; PF02483; SMC_C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; U67572; AAB99331.1; TIGR; MJ1322; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     use by non-profit institutions as long a modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Science 273:1058-1073(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-JAL-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Archaea; Euryarchaeota; Methanococci; Methanococcales; Methanocaldococcaceae; Methanocaldococcus.
MCBI_TaxID=2190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR003405; InterPro; IPR003395;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-96337999; PubMed-8688087;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            jannaschii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Complete genome sequence of the methanogenic archaeon, Methanococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FUNCTION: Involved in DNA double-strand break repair (DSBR). The rad50/mrell complex possesses single-strand endonuclease activity and ATP-dependent double-strand-specific exonuclease activity. Rad50 provides an ATP-dependent control of mrell by unwinding and/or repositioning DNA ends into the mrell active site (By
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   European Bioinformatics Institute. The property of the propert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBUNIT: Forms a con
SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                          140
                                                                                                        196
                                                                                                                                                             336
                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                     276
                                                                                                                                                                                                                                                                                                                                                                              236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       179
                                                                                                                                                                                                                                                                                                                                                                                                                                84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             34 LSKIENE--YEVLYLKPLAGYYRSLKKQLENNYMTENVNVK------DILNSRENKRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g requires a license agreement (See http://www.isb-sib.ch/announce/
an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                          NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNK-EKRDKFLSSYNYIKDSIDTDINF---A
                                                                                                                                                                                                                                                                                                       NDVLGYYKILSEKYKSDLDSIKK-----YIN-DKQ----
LSTDYNHNNLLTKFLSTGMVFENLAKTVLS-NLLDGNLQGMLN---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LERIEGELNYKENYEKELKNKMSQLE---
                                                    KYLELEEKAVEYNKLTLEYITLLQEKKSIE--
                                                                                                                                                                                                                                                                                                                                                                              NKKLLYE---
                                                                                                      -VIHLEAKVLNYT
                                                                                                                                                          KSKYRDDIDNLDTLLNKIKDEIERVETIKDLLEELKNLNEEIEKIEKYKRICEECKEYYE
                                                                                                                                                                                                                                                                     RETLNRHKDEYEKYKSLVDEIRKIESRLRELKSHYEDYLKLTKQLEIIKGDIEKLKEFIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IPR003439;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           32
158
1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Forms a complex with mrell (By similarity)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DSM 2661 / ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ŗ
                                                                                                                                                                                                                 NIETL--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SMC_N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABC_transportr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                119387
                                                                                                   -----YEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 141.5; DE Pred. No. 0.87; S1; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        inding; Coiled coil; Complete
ATP (BY SIMILARITY).
COILED COIL (POTENTIAL).
WW; 9BBBB48173E788F3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   43067;
                                                                                                                                                                                                                                                                                                                                                                           KFINKLEERKRALELKNQELKILEYDLNTVVEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EKNKKLMEINDKLNKIKKEFEDIEKLFNEWE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                There are no restrictions ng as its content is in
                                                    KNINDLETRINKLLEETKNIDIESI - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                 YKTVNHKIDLF-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RAD50 SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        114;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1005;

    ISQHQCVKKQCP

                                                                                                                                                                                                                                                                                                                       -GENEKYLPFLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             commercial
                                                                                                                                                                                                                 :
                                                                                                                                                                                                                                                                                                                                                                                                                             139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      83
                                                                                                                                                          395
                                                                                                                                                                                                                                                                   335
                                                                                                                                                                                                                                                                                                                                                                           275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    235
                                                    450
                                                                                                                                                                                                              195
```

```
RESULT FREE CONTROL OF CONTROL OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FGR1_MOUSE STANDARD; PRT; 822 AA.

P16092; Q01736; Q61562;

01-APR-1990 (Rel. 14, Created)

01-MAY.1991 (Rel. 18, Last sequence update)

15-JUN-2002 (Rel. 41, Last annotation update)

Basic fibroblast growth factor receptor 1 precursor (FGFR-1) (bFGF-R) (MFR).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (FGrn -,
FGFRI OR FLG.
Mus musculus (Mouse).
Metazoa; Chordata;
haria; Rodentia;
                                                                                                                Biochem. Biophys. Res. Commun. 205:1057-1063(1994).

-I- FUNCTION: RECEPTOR FOR BASIC FIBROBLAST GROWTH FACTOR. A SHORTER FORM OF THE RECEPTOR COULD BE A RECEPTOR FOR ACIDIC FGF (AFGF).

-I- CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP + protein
                                                                                                                                                                                                                                                                                                          Proc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-90160373; pubMed-1689490;
Reid H.H., Wilks A.F., Bernard O.;
"Two forms of the basic fibroblast growth factor receptor-like
are expressed in the developing mouse brain.";
Proc. Natl. Acad. Sci. U.S.A. 87:1596-1600(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOUSE
                                                                                                                                                                                                    "Murine fibroblast growth factor receptor 1 messenger RNAs containing two open reading f
                                                                                                                                                                                                                                                                                                                      Mansukhani A., Moscatelli D., Taiarico D., Levytska V., Bas: "A murine fibroblast growth factor (FGF) receptor expressed cells is activated by basic FGF and Kaposi FGF."; Proc. Natl. Acad. Sci. U.S.A. 87:4378-4382(1990).
                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. (SHORT FORM).
MEDLINE-90272715; PubMed-2161540;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A., AND ALTERNATI MEDLINE-91207411; PubMed-1708247;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Givol D., Yarden Y.;
                                                                                                                                                                                                                                                                       MEDLINE=95100926;
                                                                                                                                                                                                                                                                                        SEQUENCE OF 1-15 FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                          in mouse breast cancer cells: transformed cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kouhara H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Safran
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-90265603;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "The murine flg gene encodes a receptor for fibroblast growth factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Couhara H., Kasayama S., Saito H., Mats
Expression cDNA cloning of fibroblast
                                               SUBCELLULAR LOCATION:
ALTERNATIVE PRODUCTS:
VARIANT FORM AND A SHO
                 SPLICING.
SIMILARITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                            Biophys. Res. Commun.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5:635-643(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         L---CKTPIDENKKMELINQHKTQ 524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QNSGCFRHLDEREECKCLLNYKQE
                                                                                                                                                                                                                                       Saito H., Ko
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Avivi
                                                                                                     phosphate.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE=Brain;
03; PubMed=2161096;
vi A., Orr-Urtereger
                   BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENSLKEIEEKKKVLENLQKEKIELNKKLGEINSEIKRLKKILDELKEVEGKCP 503
                                                                                                                                                                                                                                      H., Kouhara H., Ku
himoto T., Sato B.;
                                                                                                                                                                                                                                                                       PubMed-7802632;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND ALTERNATIVE SPLICING
                                                    SHORT
                   TO THE FIBROBLAST GROWTH FACTOR RECEPTOR
                                               Type I membrane protein 3 ISOFORMS; A LONG FORM ORT FORM ARE PRODUCED BY
                                                                                                                                                                                                                                                                                        AND ALTERNATIVE SPLICING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                        176:31-37(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             variant
                                                                                                                                                                                                                                                       Kurebayashi S., Kasayama
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matsumoto K., Sato B.;
last growth factor (FGF) receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Α.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Neufeld G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          form in
                                                                                                                                                                                                      frames
                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FGF-responsive
                                                                                                                                                                                                    generates multiple
s via alternative
                                                  (SHOWN HERE), ALTERNATIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lonai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      )a)
                                                                                                                                                                                                                                                                                                                                                        Basilico C.
ssed in CHO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2.7.1.112)
                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA
                 CARBOHYD
VARSPLIC
VARSPLIC
VARSPLIC
CONFLICT
                                                                                                                                                                                                                                                    DISULFID
DISULFID
DISULFID
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                        NP_BIND
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                                                                                         MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY: CONTAINS 3 IMMUNOGLOBULIN-LIKE C2-TYPE DOMAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A34849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SWISS-PROT entry is
```

```
PRINTS; PRO0109; TYRKINASE.

Prodom; PD000001; Euk_pkinase; 1.

SMART; SM00408; IGC2; 3.

SMART; SM00219; TYIKC; 1.

PROSITE; PS00107; PROTEIN_KINASE_ATP;

PROSITE; PS00110; PROTEIN_KINASE_TYR;

PROSITE; PS00111; PROTEIN_KINASE_DOM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Immunoglobulin SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     modified and this statement entities requires a license
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Receptor; Glycoprotein; Tyrosine-protein kinase; ATP-binding; Transferase; Phosphorylation; Transmembrane; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00069; pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MGD; MGI:95522;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               L; M28998; AAA37290.1; -.
L; X51893; CAA36175.1; -.
L; M5053; AAA37620.1; -.
L; M33760; AAA37622.1; -.
L; S74765; AAB32845.1; ALT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          European
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IPR003598;
IPR001245;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IPR003006;
                         Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Swiss Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             domain;
Fgfrl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .9; Euk_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; Ig_MHC.
; Ig_c2.
; Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; ALT_SEQ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      copyright. It is produced through tute of Bioinformatics and the El
  ₹.
                                                                                                                                                                                                                                                                                                               POTENTIAL.

CYTOPLASMIC (POTENTIAL).

IG-LIKE C2-TYPE DOMAIN 1.

IG-LIKE C2-TYPE DOMAIN 2.

IG-LIKE C2-TYPE DOMAIN 3.

PROTEIN KINASE.

ATP (BY SIMILARITY).

ATP (BY SIMILARITY).
       N-LINKED (GLCNAC. . ) (POTI

N-SSSWPLWVAAA (IN VARIANT FORM).

T-> S (IN REF. 4).

T-> M (IN REF. 4).

ILQ -> HPS (IN REF. 1 AND 3).

G-> A (IN REF. 3).

I-> M (IN REF. 3).

V-> L (IN REF. 3).

V-> L (IN REF. 4).

R-> H (IN REF. 4).

R-> D (IN REF. 4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   is not removed.
                                                                                                                                                                                                                                                                         POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                              ATP
BY S
                                                                                                                                                                                                                                                               POTENTIAL.
                                                                                                                                                                                                                                                                                                 PHOSPHORYLATION (AUTO-)
                                                                                                                                                                                                                                                                                                                                                                                                                           EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alternative splicing.
  D5A4695FA680926B
                                                                                                                                                                                                                                                                                                              SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                  FIBROBLAST GROWTH FACTOR RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          There are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Usage
 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            no
                                                                                                                                                           (POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
                                                                                                                                                   VARIANT
                                                                                                                                                                                                                                                                                                  (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for
```

```
Ş,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                  STRAIN-S288c / AB972;
Barrell B.G., Badcock K., Bankier A.T., Bowman S., Brown D.,
Churcher C.M., Connor R., Copsey T., Dear S., Devlin K., Fraser
Gentles S., Hamlyn N., Horsnell T.S., Hunt S., Jagels K., Jones
Louis E., Lye G., Moule S., Moule T., Odell C., Pearson D.,
Rajandream M.A., Riles L., Rowley N., Skelton J., Smith V.,
Walsh S.V., Whitehead S.;
Submitted (DEC-1994) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                         IRR1 OR YILUZOC.
Saccharomyces cerevisiae (Baker's yeast).
Sucharomyceta; Fungi; Ascomycota; Saccharomycotina; Saccharomycetaceae; Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-FEB-1995
01-FEB-1995
15-DEC-1998
                     the European Bioinformatics Institute. Thuse by non-profit institutions as long modified and this statement is not removed entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                CHARACTERIZATION.
MEDLINE-96090137; PubMed=7483852;
Kurlandzka A., Rytka J., Gromadka
                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Fungi; /
Saccharomycetales;
NCBI_TaxID=4932;
                                                                                                     This
                                                                                                                                                                 Yeast 11:885-890(1995).
-!- FUNCTION: NOT KNOWN; MAY PARTICIPATE
                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                            "A new essential gene IX.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P40541;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     RRI protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RR1_YEAST
                                                                                                                   SIMILARITY: SOME, TO S. POMBE SPAC17H9.20
                                                                                                                                        SUBSTRATUM INTERACTIONS SUBCELLULAR LOCATION: C
                                                                      SWISS-PROT entry is copyright. It is produced through
een the Swiss Institute of Bioinformatics and the EN
European Bioinformatics Institute. There are no restr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  117
Z46881;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POPHIQWLKHIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FKCPSSGTPNPTLRWLKNGKE----FKPDHRIGGYKVRYATWSIIMDSV---VPSDKGN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NVSDALPSSEDDDDDDDSSSEEKETDNTKPNRRPVAPY-WTSPEKMEKKLHAVPAAKTVK 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LESDLIPYK--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LRDDVQSINWLRDGVQLVESNRTRITGEEVEVRDSIPADSGLYACVTSSPSGSDTTYFSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MWSWKCLLFWAVLVTATLCTAGAAVTPSVIDNILS-KIENEYEVLYLKPLAGVYRSLKKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EKYLPFLNNIETLYKTVNHKIDLFVIH-----LEAKV-LNYTYE-KSNVEVKIK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----YTCIVENEYGSINHTYQLDVVERSPHRPILQAGLPANKTVALGSNVEFMCKVYSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -ELNYLKTIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
CAA86966.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31,
31,
37,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SSYNY IKDSIDTDINFAND-VLGYYKILSEKYKSDLDSIKKY INDKQGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence up
                                                                                                                                                                                                       located
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     227
                                                                                                                                           Cytoplasmic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 139.5;
                                                                                                                                                                                                       g
                                                 not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                       Saccharomyces
                                                                                                                                                                                                                    R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DLTSSNYVVKDPYKFLNKEKRDKFL------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                    (See http://www
                                                                                                                                                                                                                    Murawski
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.89;
                                                                                                                                                                IN CELL-CELL AND/OR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A
                                                            as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                     M.;
cerevisiae
                                                                                                                                                                                                                                                                                                                                                                                                                          Saccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 822;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----ILNSRFNKRENFKNV
                                    .isb-sib
                                                                         restrictions
                                                                                                                                                                                                       chromosome
                                                                                                  Q
                                                                                     collaboration -
                                                                                                                                                                                                                                                                                                                       X A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                            no
                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              227
```

```
RBP2_PLAVB
ID RBP2_P
AC Q00799
AC Q00799
DT 01-APR
DT 01-OCT
OR RETicu
GN RBP2.
OS Plasmo
OC Eukary
OX NCBI_T
RN [1]
CC HICCOLL
CC III
CC -I-F(
CC This (
C) This (
CC This (
C) This (
CC This (
C) This (
C) 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ·Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DR DR FT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΨ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR005032; Pfam; PF03365; STAG; DOMAIN 44 44 DOMAIN 65 70
                                                                                                      This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entropean Bioinformatics Institute. There are no restructed by non-profit institutions as long as its content modified and this statement is not removed. Usage by and
                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. MEDLINE=92315338; PubMed=1617731;
    EMBL; M88098; AAA29744.1; -
Malaria; Receptor; Membrane
                                                                 entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                              Cell 69:1213-1226(1992)
                                                                                                                                                                                                                                                                                                                                                                           Galinski M.R., Medina C.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-APR-1993
01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q00799;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Alveolata;
NCBI_TaxID=31273;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Plasmodium vivax (strain Belem).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Reticulocyte
                                                                                                                                                                                                                                                                                                                                                       "A reticulocyte-binding
                                                                                                                                                                                                                                     FUNCTION: INVOLVED IN RETICULOCYTE ADHESION. SPHUMAN RETICULOCYTE CELLS.
SUBCELLULAR LOCATION: Membrane-bound (Probable)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S0001288; IRR1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   _PLAVB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RFASRVALNKEKLGPLFKKIVDDTIMENPEP -- NKKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REECKCLLNYKQEG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PADATTWRYSMSEQFPFYLHDNASKVLLKIFLYLESLFAKQVDVQLER---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EAKVLNYTYEKSN------VEVKIKELNYLKTIODKLADFKKNNNFVGIADLSTDY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LRSVWKPIAAIIGRLNTLVISLAATNETFENINSLFYLKWSACTSLMDIIVAIKIFELKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NNFVSRIPIMFQDFDDSTAQEINFKMLVL-----LATWNLEKWREIIEKVRDYENSISKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DPNNSRDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---NKRENFKNVLESDLIPYKDLISSNYVVKDPYKFLNK------EKRDKFLSSY-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NLNDL----PETGF-FENIETEFL--LFTVKLKGLMKLN--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KOGENEKYLPFLNNIETL-----YKTVNH-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -NYIK-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          65
1150 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Rel. 25,
(Rel. 25,
(Rel. 34,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; 1.
48
70
133008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Apicomplexa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence up
                                                                                                                                                                                                                                                                                       IN RETICULOCYTE ADHESION. SPECIFICALLY BINDS
                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DSIDTDINFANDVLGYYKILS----EKYKSDLDSIKKYIN----D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63;
                                                                                                                                                                                                                                                                                                                                                                             Ingravallo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 138; DB
Pred. No. 1.6;
53; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MW; 89688EA09485AC28 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YKDLTCSLYEL----YINKLTILGRDYPIEVDEELLQLFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POLY-ASP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POLY-GLU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    - DKCVENPNPTCNENN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   otation update) (Fragment).
                                                                                                                                                                                                                                                                                                                                                       complex of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Haemosporida; Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                       Barnwell J
Plasmodium
                                                                                      http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                       .W.;
                                                                                                                                                   restrictions
                                                                                                                                                                            TEMBL
                                                                                                                                                                              a collaboration –
MBL outstation –
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              --KIDLFVIHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -VAD--EDA
                                                                                        .ch/announce/
                                                                                                                                                                            outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                 ņ
                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79
```

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 69
 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                           Y237_BUCAI
P57331;
16-OCT-2001
16-OCT-2001
16-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Enthe European Bioinformatics Institute. There are no rest
                         SEQUENCE
                                                         Pfam; PF01103; Bac_surface_Ag; 1.
Hypothetical protein; Signal; Complete proteome
                                                                                                                                 use by non-profit institutions as long modified and this statement is not removed entitles requires a license agreement (See
                                                                                                                                                                                                                                MEDLINE-20445173; PubMed-10993077; Shiqenobu S., Watanabe H., Hattori M., Sakaki Y., "Genome sequence of the endocellular bacterial syn Buchnera sp. APS."; Nature 407:81-86(2000).
                                                                                                 EMBL; AP001118; BAB12952.1;
                                                                                                                       or send an email to license@isb-sib.ch
                                                                                                                                                                                                                                                                                                                                                                     Buchnera aphidicola (subsp. Acyrthosiphon pisum)
                                                                                                                                                                                                                                                                                                 STRAIN=Tokyo 1998;
                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                               symbiotic bacterium).
Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                     WCBI_TaxID=118099;
                                                                                                                                                                                                                                                                                                                                                                                              ypothetical
                                                                                                                                                                                                                     !- SIMILARITY: BELONGS TO THE SURFACE ANTIGEN D15 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SFTLESIKK 1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              H---QCVKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ANDVLGYYKILSEKYK---SDLDSIKKYINDKQGENEKYLPF-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSI-----DTDI--NF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DSKLEKIKTDFESLKNALKTLEGEVNALKASSDNHEHVOSKSEPVNPAL-SEIEKEET--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNILSKIENEYEVL--YLKPLAGYYRSLKKQLEN--NVMTFNVNVKDILNSRFNKRENFK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QEMKSNAD-----KYIDVSKIFNTVLDTQKSNIVTNQHSINNVKDKLKGKLQELIDADS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADLSTDYNHNULLTKFLSTGMVFENLAKTVLSNL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EKNYKAYLAYIKKNYEDTVQDVLTLNEHFNTKQVSNHEPTNFDKSNKSSEELTKAVTDSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TIISKLKGVIIE-----VNENTEMNTIESSAKEIEALYNELKNKKTSLNEIYQTSNEVKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TVNHKIDLEVIHLEAKVLNYTYEKSNVEVKIKEL - - - - NYLKTIQDKLADEKKNNNEVGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----DIDSLNTALDE----LLKKGRTCEVSRYKLIKDTVTKEISDDTELINTI
                                                                                   IPR000184; Bac_surfAg_D15.
                        617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1
1251
1251
                                                                                                                                                                                                                                                                                                                                                                                                          (Rel. 40, Rel. 40,
                                                                                                                                                                                                                                                                                                                                                                                                                                  (Rel. 40, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                protein
                        AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                295
                       71807 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6.7%;
                                                                                                                                                                                                                                                                                                                                                                                              , Last sequence update)
, Last annotation updat
BU237 precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       143741 MW;
 6.68;
                                                                                                                                                                                                                                                                                                                                                gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 137.5;
Pred. No. 1.
                                   POTENTIAL.
HYPOTHETICAL
Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                       9C91CA6D53BC27B8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       54BA51C7404AC572 CRC64;
 136.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            617
                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ä
                                   PROTEIN BU237.
                                                                                                                                                            as its content
 В
                                                                                                                                    http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                              Usage
                                                                                                                                                                                                                                                                                                                                                Buchnera
1;
                                                                                                                                                                                                                                                         Y., Ishikawa
symbiont of
                                                                                                                                                                                                                                                                                                                                                                      (Acyrthosiphon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
Length
                                                                                                                                                                     restrictions
                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LDGNLQGMLNISQ
                                                                                                                                                                                  EMBL outstation
617;
                                                                                                                                                                                                                                                         H.;
aphids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -LNNIETLYK
                                                                                                                                                 ior
                                                                                                                                                                                     collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                       mstd
                                                                                                                                                            70
                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14;
```

```
ARP_PLAFA
ID ARP_B
AC P0493
AC P0493
DT 13-AU
DT 01-NC
DT 01-NC
DE ASPAI
OS Plasi
OS Plasi
OX NCBL;
RN [1]
RP SEQUI
RR GC EUKAZ
OX NCBL;
CC This
CC This
CC This
CC the TW
CC This
CC This
CC the TW
CC This
C
                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
                                                                                                        Query Match
Best Local S
Matches 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ARP_PLAFA
P04931;
13-AUG-1987
                                                                                                                                                                                                                                                                           NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.

MEDLLINE-86176787; PubMed-2421257;

MEDLLINE-86176787; PubMed-2421257;

Stahl H.-D., Bianco A.E., Crewther P.E., Burkot T., Coppel I Brown G.V., Anders R.F., Kemp D.J.;

"An asparagine-rich protein from blood stages of Plasmodium falciparum shares determinants with sporozoites.";

Nucleic Acids Res. 14:3089-3102(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the European Bioinformatics Institute. The use by non-profit institutions as not removed entities requires a license agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13-Aug-1987 (Rel. 05, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
01-NOV-1995 (Rel. 32, Last annotation update)
Asparagine-rich protein (AG319) (ARP) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                             EMBL; M24328; AAA29491.1; PIR; A23770; A23770.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Electron of t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plasmodium falciparum.
Eukaryota; Alveolata;
                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                              Malaria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=5833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         204
55 SLKKQLENNVMTFNVNVKDILNSRFNKRENFKNVLESDLIPYKDLTS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              an email to license@isb-sib.ch).
                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LGFLIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOGMLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LKVDIIK-NDYQKYLDISTSYPYFFYNNADLNARFFYNDFKYNFDNISNIIKNTYGFEGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             --ADFKKNNNFVGIADLSTD----YNHNNLLTKFLSTGMV--FENLAKTVLSNL-LDGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RIYFTGNEITQDRVLRRKIK---QMEGKYFNTKLVELGKKL------LEKT-KYFSDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NPNEFYNRDKIDIIVNKITRFLSEYGYVNTKVIVDPQIDHKKKTIALNFNIDMKKRYFVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DPYKFLNKEKRD-----KFLSSYNYIKDSIDTD-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GYYYFNVNTKKVDFLQDKKQVDITIGVSEGKKYKISNF--FVNGNLFPYQKLI-TNLINI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NVMTFNVNVK -- DILNSRFN--------KRENFKNVLESDLIPYKDLTSSNYVVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SW-----WNLLSKST-----YSPKELNNDLEHLKNFY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SWKCLLFWAVLVTATLCTAGAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KIIQ----KLNSYDSNQIDITYQVKEQTTGSINFGLGYGVDSGTSFNLAFSQDNIFGSGNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FVIHLEAKVLNYTYEKSNVEVKIKE-----LNY-----LKTIQDKL-----
                                                                                                                                                                                                                                  1
537
537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----KILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDL
                                                                                                                                                                                                                                            Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               286
                                                                                                                                                                                                                              1
537
; 63000 MW;
                                                                                                                                       6.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Apicomplexa;
                                                                                                        67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         49;
                                                                                                        Score 135; DB
Pred. No. 0.98;
57; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                            A6D76B15318CC239 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Haemosporida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0.95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  There are no restrictions ong as its content is in
                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A
                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             104;
                                                                                                           152;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Usage
                                                                                                                                                                   Length 537;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plasmodium
                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Coppel R.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---INFANDVLGYY---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  igh a collaboration -
EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         131;
                                                                                                        92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NST----
      <u>::</u>
                                         SNYVVKDPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                n no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21;
```

ĕ	121	121 SSMKNTDNNKTDTSYNMKGTINNDNNNMDYLRNINNINEYKGSAKNKFYTNYMNKNNL 178	
¥	111	KFLYIKDSIDTDINFANDV 142	
ŏ	179	KFTQNNNDNMNINEDNNNNNNNNNNNNNNGVFSNYQNNNMNRNNSINIKRNLNNNNNINNNM 238	
Y	143	143LGyykilsekyksdldsikkyindkogenekylpflnnietlyktyn 189	
ř	239	NKMGSQDKNQNSNNNEYMNYNYQNRKNSMNNMNNNMNNNMNNMNNMNNMNNMNNMNNMNNMN 296	
Ÿ	190	SVKI	
ਲੱ	297	H :: :: : : : : : : :	
¥	227	ENLAKT	
ŏ	356	NDNMKRENNNMNNYGYDDNTVHVNNNTPSTDFFSRAVGYNNNYLNNNNNNNSAVNNNSSN 415	
Ÿ	279	279 GNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENN 338	
ŏ	416	GNNKKNENSENKNVADNNDSLNN-NKNNNNNINMNESINNNNTLNNNNEYNNQNN 469	
¥	339	GGCDADAKCTEEDSGSNGK 357	
ਰ	470	470 NE-DEDDDDWGELGE 483	

Search completed: June 11, 2003, 16:03:05 Job time : 26 secs

4)

```
Title:
Perfect score:
Sequence:
Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                Run on:
                                               Searched:
                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                   OM protein - protein search, using sw model
                                                                                                                                                                                                                  June 11, 2003, 16:02:30; Search time 80 Seconds (without alignments) 989.026 Million cell updates/sec
                                           671580 seqs, 206047115 residues
                                                                                BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                      US-09-500-376-8
2063
1 MWSWKCLLFWAVLVTATLCT.....KPDSYPLFDGIFCSHHHHHH 384
                                                                                                                                                                                                                                                                                                                                                      GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
      671580
```

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries Minimum DB seq length: 0
Maximum DB seq length: 2000000000 Database :

SPTREMBL_21:*
1: sp_archea:*
2: sp_bacteria
3: sp_fungi:* sp_vertebrate:*
sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:* sp_organelle:*
sp_phage:* sp_archea:*
sp_bacteria:* sp_mhc:* sp_invertebrate:* sp_human:* sp_fungi:* sp_mammal:* sp_rodent:*
sp_virus:* sp_plant:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

1 1879 91.1 400 2 1879 91.1 539 3 1879 91.1 539 4 1879 91.1 539 6 1876 90.9 539 7 1876 90.9 539 7 1874 90.8 3376 9 1873 90.8 539 10 1873 90.8 539 11 1196.5 58.0 651 11 1193.5 57.9 569 16 1193.5 57.9 569 16 1193.5 57.9 569	Result Query No. Score Match Length
0 5 Q0399 9 5 Q25984 9 5 Q25976 9 5 Q25976 9 5 Q25977 9 5 Q25971 9 5 Q25971 9 5 Q25971 9 5 Q25971 9 5 Q25971 9 5 Q25971 9 5 Q25972 9 5 Q25973 9 5 Q25974	h DB ID
Q03999 plasmodium Q25964 plasmodium Q25966 plasmodium Q9tyg1 plasmodium Q25976 plasmodium Q25976 plasmodium Q25971 plasmodium Q25971 plasmodium Q25971 plasmodium Q25971 plasmodium Q25973 plasmodium Q25974 plasmodium Q25974 plasmodium Q25969 plasmodium Q25974 plasmodium Q25974 plasmodium Q25975 plasmodium Q25977 plasmodium Q25977 plasmodium	Description

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	+
O.	ப	σ ₀		1168.5	1170.5	1173	1173.5	1173.5	1174	1174	1174	1174	1174.5	1174.5	1174.5	1175.5	1180.5	1183.5	1184.5	1188	1189	1191.5	1192.5	1193	1193.5	1193.5	1193.5	****
:							6.	6.		6	σ.				٥.	7.	7.	7	7.	7.	7.	7.	7.	.7	7.	7.	57.9	:
219	652	1720	372	373	373	372	569	373	570	570	372	372	569	569	569	373	569	373	373	372	372	373	569	372	1704	1694	1694	,
5	Ç	σ	տ	U	տ	ഗ	ഗ	υī	σ	σ	G	տ	G	σ	տ	σ	տ	տ	Մ	σ	G	σ	ن	IJ	σ	σ	σ	(
Q9UB87	Q25923	Q25922	Q25718	Q25728	043996	Q25717	Q25978	Q25727	Q25968	Q9TYG2	Q25720	Q25719	Q25982	Q25980	Q25970	043995	Q25967	Q25723	Q25722	Q25726	043997	Q25721	Q25983	Q25725	Q9TZT4	Q9TZT5	Q9NHX1	20000
Q9ub87	Q25923	025922	Q25718	025728	043996	025717	Q25978	025727	Q25968	Q9tyg2	025720	025719	Q25982	025980	Q25970	043995	025967	025723	Q25722	Q25726	043997	Q25721	Q25983	Q25725	Q9tzt4	Q9tzt5	Q9nhx1	
י טי	plasmodium	plasmod	plasmod	plasmod:	plasmodi	plasmodium	plasmodi	75	plasmodium					Trocilisard														

ALIGNMENTS

망	Qy		ဋ	FF.	1	FT	KW	DR		מט	DR	RL	RT	RT	RT	RA	RP	RN	Q (3 6	GN	DE	DI.	3 5	AC	Ħ	o ze
0	~	Quer Best Matc	-	-	-	ч	24	20 A	, ,	0 20	æ	-	Н	Н	Н	≫	Ф	z	× (ט ני	2	æ	Η,	3 H	റ	O	RESULT Q03999
		Query Match Best Local Matches 35	SEQU	CHAIN	SIGNAL	NON_TER	Signal.	PROS	111	Inte	EMBI	Subn	grov	prot	"Pro	Blac	SEQ		NCB	PLAS	MSP1.	Merc	01-1	201	003999;	003999	φ'n 1
23	22	fatc bcal	SEQUENCE	2 5	Ž	TER	hal.	PROSTTE:	בוורפודוט;	rPr	7.	nitt	Ě	<u>:ein</u>	teo	kma	ENC	ı	Ta	mod		zoi	- SEC	Ö Ö	999;	999	
		ch 1 Sim 355;	Ħ						2		6468	ed (fac	ᆣ	lyti	: :	E E		NCBI_TaxID=5833;	mut m	•	te s	01-DEC-2001	01-NOV-1996			
AVT	AVT	iila Co	400	287	۸ د	_		000		PRO	1,	YAM	tor	ğ	o O		ĝ		583	tal	,	urf				PR	
PSVI	PSVI	y Match Local Similarity hes 355; Conser	400 AA;	7 (n 1	_	,	PROSTTE: PS00109: P	124	0056	AAA	-199	-11	es	roce	Lic	SEQUENCE FROM N.A.		ω;	Plasmodium falciparum	•	ace	H	rem		ELIN	
DNI	DNI	vat		400	24			Β Ο ⊢		η <u>1</u>	EMBL; M64681; AAA29709.1;	Ë	e e	2	SS 1	ğ			į	i i		Merozoite surface protein 1	(TrEMBLrel. 19,	TremBLrel.		PRELIMINARY;	
LSKI	SKI	91.1%; 99.4%; ive	45824	ی د	. **	-		7 .	Į,	EGF-	9.1;	ç	omai	nemb	o O	T.			Ţ	į.		tein		-:	,	RY;	
ENE	ENE		WW;					DS00109: PROTETN KINASE TVE	rekourzes; Tyr_pkinase	InterPro; IPR000561; EGF-like	.•	Submitted (MAY-1991) to the EMBL/GenBank/DDBJ databases	growth1 factor-like domains.";	rane	Ě	Blackman M.J., Ling I.T., Nicholls S.C., Holder A.A.;			NCBI_TaxID=5833;) 3.				2,2			
EVL	TVE T	Score 1879; Pred. No. 1.3 0; Mismatches		MER	POI		į	E CE	lase			TEMBL		ģ	ie P	PQ Pd				<u>.</u>		precursor (Fragment).	Last annotation update)	Created)		PRT;	
YLKP	XLKE	re 1 d. N Mism	37F0	MEROZOTTE	POTENTIAL.			TVE	•			Gen		und	lası	18 8			,			ursc	ant	ted)			
LAG	LAG	1879; No. 1 smatch	750				; H	_				Bani		frac	od i	0						Ħ C	ota.			400	
/YRS	/YRS	DB 1.3e-1	5862	SURFACE			•					ĝ	,	men	e e	, E			dec			Frag	tion	3		O AA.	
LKKC	LKKC	80.00	537F075058626AC2	A C								Ē		S T	alc	lde			1	!		ment	ממו			•	
LEN	LEN	••	CR.	מיק מיק מיק	;							lata)nta	par	>							date	5			
NVMT	IMAN	ength Indels	CRC64;	PROTEIN								base		inin	§ .	>			1001	1		•	_				
INN.	FNVI	Length 400; Indels										Š		덥	ero				r Lasmoutum.								
VKD	VKD	0;												ð o	"Proteolytic processing of the Plasmodium falciparum merozoite					i							
ILNS	SNTI													pide													
GEAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRENK	GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNAMTFNANKDILNSRFNK	Gaps												protein-1 produces a membrane-bound fragment containing two epidermal	surface												
82	K 81													-	Ģ												
		0;																									

```
δ
                                                           밁
                                                                          δÃ
   밁
               Š
                               밁
                                                                                           ₽
                                                                                                      δĀ
                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                 日
                                                                                                                                                      Query Match
Best Local S
Matches 355
                                                                                                                                                                                                                                                                                                                                             01-NOV-1996
01-NOV-1996
01-MAR-2002
                                                                                                                                                                                           PROSITE;
EGF-11ke
NON_TER
                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE-93295445; PubMed-8515786;
Jongwutiwes S., Tanabe K., Kanbara H.;
"Sequence conservation in the C-terminal
"Sequence conservation in the MSP1) of the conservation in the C-terminal
                                                                                                                                                                                                               Mol. Biochem. Parasitol. 59:95-100(1993). EMBL; D1335; BAA02617.1; -. InterPro; IPR000561; EGF-11ke. InterPro; IPR001245; Tyr_pkinase. Pfam; PF00008; EGF; 1.
                                                                                                                                                                                                                                                       major
field
                                                                                                                                                                                                                                                                                                        Plasmodium falciparum.
Eukaryota; Alveolata;
NCBI_TaxID-5833;
                                                                                                                                                                                                                                                                                                                                                                    Q25984
Q25984;
                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                MSP1.
                                                                                                                                                                                                                                                                                                                                       Major merozoite
   402
                 262
                                342
                                              202
                                                              282
                                                                            142
                                                                                            222
                                                                                                                        162
                                                                                                                                                                                                                                                                                                                                                                                                                 323
                                                                                                                                                                                                                                                                                                                                                                                                                              322
                                                                                                                                                                                                                                                                                                                                                                                                                                              263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            203
                                                                                                                                                                                                                                                                                                                                                                                                                                                            262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       142
                                                                                                                                                                                                                                                     merozoite surface
isolates.";
                                                                                                         82
                                                                                                                                       22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 82
                                                                                                                                                             Similarity
PS00109; PROTEIN_K domain; Merozoite.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                            GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                    539
                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel. 01, Created)
(TrEMBLrel. 01, Last sequence update)
(TrEMBLrel. 20, Last annotation update)
site surface protein (Fragment).
                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                    ΑĄ,
                                                                                                                                                                                                         PROTEIN_KINASE_TYR;
                                                                                                                                                                                    61115
                                                                                                                                                             91.1%;
99.4%;
                                                                                                                                                                                                                                                                                                                 Apicomplexa;
                                                                                                                                                                                    MW;
                                                                                                                                                      0
                                                                                                                                                             Score 1879;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                    3788015F3127CB9E CRC64;
                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                Haemosporida;
                                                                                                                                                                                                                                                                                                                                                                            539
                                                                                                                                                                                                                                                             l part of the of Plasmodium
                                                                                                                                                             DB 5;
.8e-86;
                                                                                                                                                                                                                                                                                                                                                                            ₿
                                                                                                                                                      2;
                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                 Plasmodium.
                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                    precursor
                                                                                                                                                                                                                                                             falciparum
                                                                                                                                                                     539;
                                                                                                                                                      0
                                                                                                                                                                                                                                                                     ៩
                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                             from
               321
                              401
                                            261
                                                            341
                                                                                                        141
                                                                                                                        221
                                                                                                                                                                                                                                                                                                                                                                                                                                             322
                                                                                                                                                                                                                                                                                                                                                                                                                                                            321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   141
                                                                                                                                                      0
RESULT
Q9TYG1
ID Q9
AC Q9
DT 01
DT 01
DT 01
DT 01
DT MB
                                                                                                                                                                                                                                                                                                 Ϋ́
                                                                                                                밁
                                                                                                                              Ş
                                                                                                                                                           ğ
                                                                                                                                                                           멍
                                                                                                                                                                                         Ş
                                                                                                                                                                                                         밁
                                                                                                                                                                                                                   . 0
                                                                                                                                                                                                                                       밁
                                                                                                                                              밁
                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 355
Q9TYG1 1
Q9TYG1;
Q1-MAY-2000 01-MAY-2000 01-MAR-2002 01-MAR-2002 Major merozo:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q25966;
Q25966;
01-NOV-1996
                                                                                                                                                                                                                                                                                                 PROSITE;
EGF-like
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                            MO1. Blochem. Parasitol. 59:95-11
EMBL; D1337; BAA02618.1; -
InterPro; IPR000561; EGF-like.
InterPro; IPR001245; Tyr_pkinase.
Pfam; PF00008; EGF: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1996
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                    Plasmodium falciparum.
Eukaryota; Alveolata;
NCBI_TaxID=5833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Major merozoite
                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       w
                                                                                               322
                                                                                                                402
                                                                                                                                              342
                                                                                  462
                                                                                                                              262
                                                                                                                                                            202
                                                                                                                                                                           282
                                                                                                                                                                                          142
                                                                                                                                                                                                         222
                                                                                                                                                                                                                                      162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           322
        merozoite
                                                                                                                                                                                                                       82
                                                                                                                                                                                                                                                     22
                                                                                                                                                                                                                                                                     355;
                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                domain; Merozoite.
                                                                                                                                                                                                                                                                                                                       PS00109;
            (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                 539
                                                                                                                                                                                                                                                                                                                                                                                                                                                   (TrEMBLrel.) (TrEMBLrel.) (Tremblrel.)
                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TrEMBLiel.
                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                       N.A.
                                                                                                                                                                                                                                                                                                 AA;
        surface
                                                                                                                                                                                                                                                                                                 61145 MW;
                                                                                                                                                                                                                                                                          91.1%;
99.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                             Apicomplexa;
               13,
13,
20,
                                                                                                                                                                                                                                                                   0,
```

```
MEULINE-93295445; PubMed-8515786;
Jongwuttwes S., Tanabe K., Kanbara H.;
"Sequence conservation in the C-terminal major merozoite surface proteins (MSPI) of field isolates.";
Mol micch-
                                                                                                                                                                                 RENFKNYLESDLIPYKDLTSSNYVYKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                               GEAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                     KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                              GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                 EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                        KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROTEIN_KINASE_TYR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 01, Created)
. 01, Last sequence upd
. 20, Last annotation u
e protein (Fragment).
protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              59:95-100(1993).
         Created)
Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 1879; D
Pred. No. 1.8e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         787DE90C1D0ACDE7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Haemosporida;
                                                                539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l part
of Pla
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db
1.8e-86;
2;
                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₿
                          update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        art of the plasmodium
            update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       precursor to
m falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ៥
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       518
                                                                                                                                                                                    461
                                                                                                                                                                                                                                      401
                                                                                                                                                                                                                                                                                                                                                                                               221
                                                                                                                                                                                                                                                                261
                                                                                                                                                                                                                                                                                                                  201
                                                                                                                                                                                                                                                                                                                                                                        141
                                                                                                                                                                                                                                                                                                                                                                                                                      81
                                                                                                                                                                                                                                                                                           341
                                                                                                                                                                                                                                                                                                                                             281
```

```
RESULT
OCCUPANT
OCCUP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 355
                                                                                               SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE=93295445; PubMed=8515786;
Jongwutiwes S., Tanabe K., Kanbara H.;
"Sequence conservation in the C-terminal
"Sequence conservation in the MSP1) of
                                                                                                                                                                                                                                                                                                                                      Q25976;
01-NOV-1996
01-NOV-1996
01-MAR-2002
  InterPro;
InterPro;
Pfam; PF00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Sequence conservation in the C-terminal major merozoite surface proteins (MSP1) of field isolates.";
                                                                                                                                                                                                                                                            Plasmodium
Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                   Q25976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE; PS001U9; PKULELIN_...
EGF-like domain; Merozoite.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPRO00561; EGF-like.
InterPro; IPRO01245; Tyr_pkinase.
Pfam; PF00008; EGF; 1.
PROSITE; PS00109; PROTEIN_KINASE_TYR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOL. Biochem. Parasitol.
EMBL; D13358; BAA02619.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=93295445; PubMed=8515786; Jongwutiwes S., Tanabe K., Kanbar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plasmodium falciparum.
Eukaryota; Alveolata; Apicomplexa;
NCBI_TaxID=5833;
                                                             EMBL;
                                                                                                                                                                                                                                      NCBI_TaxID=5833;
                                                                                                                                                                                                                                                                                                   MSP1.
                                                                                                                                                                                                                                                                                                                    Major merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          G
                Biochem. Parasitol. 59:95-10; D13362; BAA02623.1; -. rPro; IPR000561; EGF-11ke. rPro; IPR001245; Tyr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          355;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VIGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GEAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                      Alveolata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        539
                                                                                                                                                                                                                                                                                                                                  (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΑA;
                                                                                                                                                                                                                                                                                                                    surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61075 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           91.1%;
99.4%;
                                                                                                                                                                                                                                                        Apicomplexa;
                                                                                                                                                                                                                                                                                                             . 01, Crea
. 01, Last
20, Last
protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             59:95-100(1993).
                                                                             59:95-100(1993)
                                                                                                                                                                                                                                                                                                                Last sequence up
Last annotation
tein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 1879;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C70C2E100EC4A101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ed. No. 1.86
Mismatches
                                                                                                                                                                                                                                                        Haemosporida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Haemosporida; Plasmodium.
                                                                                                                                                                                                                                                                                                                                                                                                                   539
                                                                                                                  of Plasmo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  l part of the p
                                                                                                                                                                                                                                                                                                                                                                                                                   æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8e-86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                      update)
                                                                                                                  art of the p
                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CRC64;
                                                                                                                                                                                                                                                        Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                precursor to
n falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  precursor to
n falciparum f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               539;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                      6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                  from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
225972 1D 225972
                   δÃ
                                                         밁
                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 355
                                                                                                                                    Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Plasmodium Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q25972;
01-NOV-1996
01-NOV-1996
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE;
EGF-like
NON_TER
SEQUENCE
                                                                                                                                                                                                                                 Pfam; PF00008; EGF; 1.
PROSITE; PS00109; PROTEIN_K
EGF-like domain; Merozoite.
NON_TER 1 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plasmodium falciparum.
Eukaryota; Alveolata;
NCBI_TaxID=5833;
                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-93295445; PubMed-8515786;
Jongwutiwes S., Tanabe K., Kanbara H.;
"Sequence conservation in the C-terminal
                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                        InterPro; IPR000561;
InterPro; IPR001245;
                                                                                                                                                                                                                                                                                                                                               Mol. Biochem. Parasitol.
EMBL; D13360; BAA02621.1;
                                                                                                                                                                                                                                                                                                                                                                                       field
                                                                                                                                                                                                                                                                                                                                                                                                         major
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Major merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q25972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Φ
                                                                                                                                                          Local
                                                                                                                                                                         Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          222.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         142
                                                                                                                                    354;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       162
                                                           162
                                                                                                                                                                                                                                                                                                                                                                                   merozoite surface proteins (MSP1)
isolates.";
                     82
                                                                                              22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  al Similarity
355; Conserv
                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RENFKNYLESDLIPYKDLISSNYVYKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PS00109; PROTEIN_I domain; Merozoite
RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                       GEAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                             GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                               539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         539 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (TrEMBLrel.
                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                               AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                surface
                                                                                                                                                                                                                                                                    PROTEIN_KINASE_TYR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROTEIN_KINASE_TYR;
                                                                                                                                                                                                               61076 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61045
                                                                                                                                                      90.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  91.1%;
99.4%;
                                                                                                                                                                                                                                                                                                    Tyr_pkinase
                                                                                                                                                                                                                                                                                                                            EGF-like.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Apicomplexa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01, Created)
01, Last sequence update)
20, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein
                                                                                                                                                                                                                                                                                                                                                                 59:95-100(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WW;
                                                                                                                              Score 1876; D
Pred. No. 2.5e
1; Mismatches
                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1879; D. Pred. No. 1.8e 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                             72186F1412C57D1C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8BF9C64322E9A778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Haemosporida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             539
                                                                                                                                                                                                                                                                                                                                                                                                       l part of the of Plasmodium
                                                                                                                                                      DB 5;
.5e-86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                  <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Plasmodium
                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                     precursor to
n falciparum
                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                      ដ
                                                                                                                                Caps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                     o the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            141
                                                       221
                                                                                              81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   221
```

```
25981 110 25981 110 25981 110 25981 110 25981 110 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 25981 2598
   Ş
                                                                  밁
                                                                                                                          Š
                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                               Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.

MEDLINE=93295445; PubMed-8515786;

Jongwutiwes S., Tanabe K., Kanbara H.;

"Sequence conservation in the C-terminal major merozoite surface proteins (MSP1) of field isolates.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plasmodium falciparum.
Eukaryota; Alveolata; Apicomplexa;
NCBI_TaxID=5833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mol. Biochem. Parasitol. 59:95-100(1993). EMBL; D13363; BAA02624.1; -. InterPro; IPR000561; EGF-like. InterPro; IPR001245; Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q25981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Major merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EGF-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      l-NOV-1996 (TrEMBLrel.
L-NOV-1996 (TrEMBLrel.
L-MAR-2002 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TER
      322
                                                                  402
                                                                                                                                 262
                                                                                                                                                                                                342
                                                                                                                                                                                                                                                               202
                                                                                                                                                                                                                                                                                                                           282
                                                                                                                                                                                                                                                                                                                                                                                      142
                                                                                                                                                                                                                                                                                                                                                                                                                                                     222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PF00008; EGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                   GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                              KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                            VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTENVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     domain; Merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GMVFENLAKTYLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KVLNYTYEKSNVEVKIKELNYLKTIQDKLADEKKNNNEVGIADLSTDYNHNNLLTKFLST 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA
   EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                         KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                       VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GEAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PS00109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPENSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KYLNYTYEKSNYEVKIKELNYLKTIQDKLADFKKNNNFYGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLEVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RENFKNYLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                  GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPENSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90.9%;
.larity 99.2%; .
Conservative 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ÃĄ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROTEIN_KINASE_TYR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61046 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01,
01,
20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 1876; D. Pred. No. 2.5e
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3EED87473EE87B65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence update) annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Haemosporida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2.5e-86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of Pla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ៩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      201
                                                                                                                                 321
                                                                                                                                                                                             401
                                                                                                                                                                                                                                                            261
                                                                                                                                                                                                                                                                                                                           341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     461
                                                                  461
                                                                                                                                                                                                                                                                                                                                                                                          201
                                                                                                                                                                                                                                                                                                                                                                                                                                                     281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  281
RESULT
Q25971
ID Q2
AC Q2
AC Q2
DT 01
DT 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRESULTA
OPBINGS
OPBIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Merozoite
MSP-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9BMG8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              isolate.";
                                                                                                                                                                                                                                                                                                                                                                                      ٠
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _
```

```
Q25971;
Q25971;
01-NOV-1996
01-NOV-1996
01-MAR-2002
Plasmodium falciparum.
Eukaryota; Alveolata;
NCBI_TaxID=5833;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (DEC-2000) to the EMBL/
EMBL; AF325919; AAK07641.1; -
InterPro; IPR000561; EGF-like.
InterPro; IPR001245; Tyr_pkinase.
                                                                Major merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=FCB-1;
Li X.R., Goel V.K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Alveolata; NCBI_TaxID=5833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-JUN-2001 (TrEMBLrel. 17,
01-JUN-2001 (TrEMBLrel. 17,
01-JUN-2002 (TrEMBLrel. 21,
Merozoite surface protein 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           kDa subfragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                        VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                                                                                                                                                                                                                          LNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEAKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEAKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PS00109; PROTEIN_KINASE_TYR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                      DKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFANDVL
                                                                                                                                                                                                                                                                                       DKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                      VFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQEG
                                                                                                                                                                                                                                                                                                                                                                                         LNYTYEKSNYEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLSTGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          376 AA;
                                                                              (TrEMBLrel. 01, Created)
(TrEMBLrel. 01, Last sequence update)
(TrEMBLrel. 20, Last annotation updat
oite surface protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          43218 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         90.8%;
                                  Apicomplexa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Apicomplexa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             u S.C.,
MSP-1 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1874; DB 5; Pred. No. 2.1e-86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chishti A.H., Oh s
gene of Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EB2A72EDF231A5AF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Haemosporida; Plasmodium
                                 Haemosporida; Plasmodium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         UNKNOWN_1
                                                                                                                                                                     Å
                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                       355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   518
                                                                                                                                                                                                                                                                                                                                                      323
                                                                                                                                                                                                                                                                                                                                                                                                                        263
                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                       240
```

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Ma
Best Loc
Matches
                                                                                                MEDLINE-93295445; PubMed-8515786;
MEDLINE-93295445; PubMed-8515786;
Jongwutiwes S., Tanabe K., Kanbara H.;
"Sequence conservation in the C-terminal
"Sequence surface proteins (MSP1) of
                                                                                                                                                                           Plasmodium :
Eukaryota; /
                                                                                                                                                                                                                   01-NOV-1996
01-NOV-1996
01-MAR-2002
                                                                                                                                                                                                                                                 Q25973
Q25973;
PROSITE;
EGF-like
NON_TER
SEQUENCE
                                                                                           major
field
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            major merozorre ;
field isolates.";
                                                                                                                                                                Plasmodium falciparum.
Eukaryota; Alveolata;
CCBI_TaxID=5833;
                                                                                                                                                                                                MSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00008; PROSITE; PS0010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
MEDLINE=93295445; PubMed=8515786;
Jongwutiwes S., Tanabe K., Kanbar
                                                   InterPro;
                                                                         EMBL;
                                                                                                                                                                                                         Major merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGF-like domain; Merozoite, NON_TER 1 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Jongwutiwes S., Tanabe K., Kanbara H.; Sequence conservation in the C-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                                                                                10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         / Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TER
                                                Blochem. Parasitol. 59:95-1; D13361; BAA02622.1; -. Proo; IPR000561; EGF-11ke. Pro; IPR001245; Tyr_pkinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Biochem. Parasitol. 59:95-10; D13359; BAA02620.1; -. rPro; IPR000561; EGF-1ike. rPro; IPR001245; Tyr_pkinase
                                                                                                                                                                                                                                                                                                                                  322
                                                                                                                                                                                                                                                                                                                                                      402
                                                                                                                                                                                                                                                                                                                                                                                               342
                                                                                                                                                                                                                                                                                                                                                                                                                  202
                                                                                                                                                                                                                                                                                                                                                                                                                                       282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                222
                                                                                           merozoite surface proteins
isolates.";
                                                                                                                                                                                                                                                                                                                462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 354;
                                          PF00008;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            merozoite surface proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22 GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNYMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                     domain; Merozoite.
                              00008; EGF;
PS00109; PI
                                                                                                                                                                                                                                                                                                                                                   VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNHKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RENFKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PS00109; PROTEIN_KINASE_TYR;
                                                                                                                                                                                                                                                                                                              EGSKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                        EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                     VLGYYKILSEKYKSDLDSIKKYINDKQGENEKYLPFLNNIETLYKTVNDKIDLFVIHLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RENFKNYLESDLIPYKDLTSSNYVYKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GEAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRFNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         539
  539
                                                                                                                                                                                                                   (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                             PRELIMINARY;
  Ŗ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA; 61017 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EGF;
                                                                                                                                                                                                         surface
                              PROTEIN_KINASE_TYR;
  61047 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        90.8%;
                                                                                                                                                                            Apicomplexa;
                                                                                                                                                                                                        01, Crea
01, Last
20, Last
protein
                                                                                59:95-100(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        59:95-100(1993)
                                                                                                                                                                                                     Last sequence update)
Last annotation update)
tein (Fragment).
                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1873;
Pred. No. 3
                                                                                                                                                                                                                                                            PRT;
 105C2E02974FB398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5CA9C651BB62B5E1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (MSP1)
                                                                                                                                                                           Haemosporida;
                                                                                                                                                                                                                                                            539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             O.
                                                                                                     얁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            part of the precursor to 
of Plasmodium falciparum :
                                                                                                     part of the precursor to the 
of Plasmodium falciparum from
                                                                                                                                                                                                                                                            Ã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .5e-86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ა
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CRC64;
                                                                                                                                                                           Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   539;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                              518
                                                                                                                                                                                                                                                                                                                                 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       221
                                                                                                                                                                                                                                                                                                                                                      461
                                                                                                                                                                                                                                                                                                                                                                                             401
                                                                                                                                                                                                                                                                                                                                                                                                                                     341
                                                                                                                                                                                                                                                                                                                                                                                                                                                         201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 141
                                                                                                                                                                                                                                                                                                                                                                                                                261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
25924
1D 25924
1D 27929
1D 279
  δã
                                         밁
                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                     Query Match
Best Local S
Matches 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q25924;
01-NOV-1996
01-NOV-1996
                                                                                                                                                                                                                   Pfam; PF
                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-92275047; PubMed-1592091; Olafsson P., Mattle H., Certa U.; "Plasmodium falciparum: the repetitive MSA-1 surface protein RO-71 isolate is recognized by mouse antibody against the nonrepetitive repeat block of RO-33."; Exp. Parasitol. 74:381-389(1992).
                                                                                                                                                                                                                                                                           Exp. Parasitol. 81:47-54(
EMBL; 235329; CAA84558.1;
                                                                                                                                                                                                                                                                                                             Tolle R., Bujard H., Cooper J.A.; "Plasmodium falciparum: variations merozoite surface antigen-1.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Plasmodium 
Eukaryota;
                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=95354793; PubMed=7628566;
                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-RO-7
                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-RO-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=5833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Merozoite surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q25924
                                                                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  222
                                         257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                162
                                                                                                                                                                                                                                        PF00008;
    82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22
                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                       GEAISVT-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAVTPSVIDNILSKIENEYEVLYLKPLAGVYRSLKKQLENNVMTFNVNVKDILNSRPNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDEREECKCLLNYKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDYNHNNLLTKFLST
RENFKNYLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EGSKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                            IPR000561;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6 (TrEMBLrel. 01, 06 (TrEMBLrel. 01, 11) 1 (TrEMBLrel. 19, 11) 1 surface antigen 1
                                                                                                                                                                                                 651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        falciparum.
Alveolata;
                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                 AA;
                                                                                                                                                                                                                                        EGF;
                                                                                                                                                                                                                                                                                               81:47-54(1995).
                                    MDNILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIFTFNLNLNDILNSRLKK
                                                                                                                                                                                                 74134 MW;
                                                                                                                                     59.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90.8%;
                                                                                                                                                                                                                                                        EGF-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Apicomplexa;
                                                                                                                   56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence update)
Last annotation update)
(Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
Pred.
                                                                                                                                       Score 1196.5; DB Pred. No. 2.3e-52;
                                                                                                                                                                                                 AA2137E699255150 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1873;
No. 3
                                                                                                                                                                                                                                                                                                                                      within
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Haemosporida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                      the C-terminal
                                                                                                                                                          DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 539;
                                                                                                                   Indels
                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                      region
                                                                                                                   21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of.
                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   141
  141
                                    315
                                                                            81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            221
```

Q

밁 Ş 밁 δÃ 밁 Š 밁

밁 Ş Дb

364 369

```
Q25724
ID Q2572
AC Q2572
AC Q2572
AC Q2572
DT Q1-NC
DT Q1
                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 223
                                                                                                                                                                                                                                                                                                                                                                                                             NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-INFECTED HUMAN BLOOD SAMPLE;
Shi Y.-P., Alpers M.P., POVOA M.M., Nahlen B.L., Oloo A.
"Sequence of the C-terminal region of merozoite surface
(MSP-1) in field-derived plasmodium falciparum.";
Submitted (FEB-1995) to the EMBL/GenBank/DDBJ databases.
EMBL; U20729; AAA62220.1; ...
EMBL; U20729; AAA62230.1; ...
InterPro; IPR000561; EGF-11ke.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plasmodium falciparum.
Eukaryota; Alveolata;
NCBI_TaxID=5833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              025724;
01-NOV-1996 (TREMBLrel. 01, C
01-NOV-1996 (TREMBLrel. 01, L
01-DEC-2001 (TREMBLrel. 19, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q25724
Q25724;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                               NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EQUENCE FROM N.A.
     246
                                  250
                                                                     186
                                                                                                     190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     183
                                                                                                                                                                                                                                                                                                                                                                                                                                                             PF00008; EGF; 1.
                                                                                                                                                                                                          99
                                                                                                                                                                                                                                         90
                                                                                                                                                                                                                                                                                                          30
                                                                                                                                                                                                                                                                           σ
                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                          CTKPDSYPLEDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSGCFRHLDE
                                                                                     HKIDLFVIHLEAKVLNYTYEKSNYEVKIKELNYLKTIQDKLADFKKNNNFVGIADLSTDY
                                                                                                                                                                                                                           CFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADLSTDYNHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VLGYYKILSEKYKSDLDSIKKYI-----
                                                                NKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNHNDFEAIKKLINDD
                                                                                                                                      LAKYKDDLESIKKVIKEEKEKFPSSPPTTPPSPAKTDEQKKESKFLPFLTNIETLYNNLV
                                                                                                                                                                    ESDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQEGISYYEKV
                                                                                                                                                                                                                                                                         MDNILSGFENEYDVIYLKPLAGVYRSLKKQIEKNIFTFNLNLNDILNSRLKKRKYFLDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPQNSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GISYYEKVLAKYKDDLESIKKVIKEEKEFPSSPPTTPPSPAKTDEQKKESKFLPFLTNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     373
373 AA;
                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                             42839
                                                                                                                                                                                                                                                                                                                                                             57.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Apicomplexa;
                                                                                                                                                                                                                                                                                                                                                                                                             MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   378
                                                                                                                                                                                                                                                                                                                                             53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last seq
Last ann
, 42 kDa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                                                                                                                                         Score 1194.5; DB 5;
Pred. No. 1.6e-52;
3; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                             A21A91B2076F415A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence update) annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Haemosporida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               notation update)
C-terminal region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                            5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plasmodium
                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -- NDKQGENEKYLPFLNNIE
                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .G., Lal A.A.;
protein-1
                                                                                                                                                                                                                                                                                                                                           21;
                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   182
                                  309
     304
                                                                                                                                      185
                                                                                                                                                                                                                                                                         65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14
Q25974
ID Q2597
                                                                                                               Ş
                                                                                                                                                      밁
                                                                                                                                                                                   ğ
                                                                                                                                                                                                                                                      δã
                                                                                                                                                                                                                                                                                          ğ
                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ğ
                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Jongwittwes S., Tanabe K., Ranbara H.;
"Sequence conservation in the C-terminal
major merozoite surface proteins (MSP1) of
field isolates.";
Mol. minch--
Q25974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mol. Biochem. Parasitol. 59:95-100(1993).
EMBL; D13346; BAA02607.1; -.
InterPro; IPR000561; EGF-11ke.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plasmodium falciparum.
Eukaryota; Alveolata;
NCBI_TaxID-5833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-NOV-1996
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 025969;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Major merozoite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EGF-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00008; EGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13
                                                                                   533
                                                                                                                   363
                                                                                                                                                      473
                                                                                                                                                                                                                        414
                                                                                                                                                                                                                                                       243
                                                                                                                                                                                                                                                                                          354
                                                                                                                                                                                                                                                                                                                                                           294
                                                                                                                                                                                                                                                                                                                                                                                          142
                                                                                                                                                                                                                                                                                                                                                                                                                           234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     310
                                                                                                                                                                                                                                                                                                                        183
                                                                                                                                                                                                                                                                                                                                                                                                                                                           82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                     CTKPDSYPLFDGIFCS 378
                                                                                                                                                                       CFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCE
                                                                                                                                                                                                                                                                                                                                                       KKLINDDTKKDMLGKLLSTGLY-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENSG
                                                                                  CTKPDSYPLFDGIFCS
                                                                                                                                                    CFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCE
                                                                                                                                                                                                                                        ADLSTDYNHNNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSG
                                                                                                                                                                                                                                                                                                                                                                                        VLGYYKILSEKYKSDLDSIKKYI-------NDKQGENEKYLPFLNNIE 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              domain; Merozoite.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PLFDGIFCS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCECTKPDSY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               569 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel.
(TrEMBLrel.
(TrEMBLrel.
PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64485 MW; . A26C45914AF01396 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            59.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Apicomplexa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01,
01,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein
                                                                                  548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last sequence update)
Last annotation update)
tein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1193.5;
Pred. No. 2.8
PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Haemosporida;
569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.8e-52;
74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of Plasmodium
₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              precursor to the
n falciparum from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              569;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21;
                                                                                                                                                                                                                    472
                                                                                                                                                                                                                                                                                       413
```

밁 Qy 밁 δÃ 밁 Š В δÃ 밁 Š

302

353

```
RESULT
Q25975
ID Q2
AC Q2
AC Q2
AC Q2
DT 01
DT 01
DT 01
DT 01
DT 01
RP ME
RP SE
RA JC
                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                            20
                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                              δã
                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                       δĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                           멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                           Q25975;
Q25975;
Q1-NOV-1996
Q1-NOV-1996
Q1-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE-93295445; PubMed-8515786;
Jongwutiwes S., Tanabe K., Kanbara H.;
"Sequence conservation in the C-terminal
"Sequence surface proteins (MSP1) of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q25974;
01-NOV-1996
01-NOV-1996
01-MAR-2002
SEQUENCE FROM N.A. MEDLINE-93295445; PubMo Jongwutiwes S., Tanabe
                                       Plasmodium falciparum Eukaryota; Alveolata; NCBI_TaxID=5833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR000561; EGF-11
Pfam; PF00008; EGF; 1.
EGF-11ke domain; Merozoite.
NON_TER 1 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         field
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plasmodium falciparum.
Eukaryota; Alveolata;
NCBI_TaxID=5833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Major merozoite
                                                                        Major merozoite
MSP1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biochem. Parasitol. 59:95-100(1993).; D13348; BAA02609.1; -.
                                                                                                                                                                                           533
                                                                                                                                                                                                             363
                                                                                                                                                                                                                                     473
                                                                                                                                                                                                                                                        303
                                                                                                                                                                                                                                                                                                                      354
                                                                                                                                                                                                                                                                                                                                                                                                                                               175
                                                                                                                                                                                                                                                                                                                                          183
                                                                                                                                                                                                                                                                                                                                                                294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         merozoite surface proteins
isolates.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        224;
                                                                                                                                                                                                                                                                                                                                                                                                                          82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                         CTKPDSYPLFDGIFCS
                                                                                                                                                                                                                                                                                       ADLSTDYNHNNLLTKELSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSG
                                                                                                                                                                                                                                                                                                                                                                                                                                             CFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCE
                                                                                                                                                                                                                                                                           KKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENSG
                                                                                                                                                                                                                                                                                                                     TLYNNLVNKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNINDFEAI
                                                                                                                                                                                                                                                                                                                                    TLYKTVNHKIDLFVIHLEAKVLNYIYEKSNVEVKIKELNYLKIIQDKLADFKKNNNFVGI
                                                                                                                                                                                                                                                                                                                                                              GISYYEKVLAKYKDDLESIKKVIKEEKEFPSSPPTTPPSPAKTDEQKKESKFLPFLTNIE
                                                                                                                                                                                                                                                                                                                                                                          RKYFLDVLESDLMQFKHISSNEYIIEDSFKLLNSEQKNTLLKSYKYIKESVENDIKFAQE
                                                                                                                                                                                                                                                                                                                                                                                                                RENEKNVLESDLIPYKDLTSSNYVVKDPYKFLNKEKRDKFLSSYNYIKDSIDTDINFAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (TrEMBLrel.) (TrEMBLrel.) (TrEMBLrel.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  569 AA; 64457 MW;
                                                                                         (TremBLrel. 01, Created)
(TremBLrel. 01, Last sequence update)
(TremBLrel. 20, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                       PRELIMINARY;
                                                                                   surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           surface
PubMed=8515786;
anabe K., Kanbara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57.9%;
59.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EGF-like.
                                                    Apicomplexa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Apicomplexa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01, Created)
01, Last sequence update)
20, Last annotation update)
protein (Fragment).
                                                                                  protein (Fragment).
                                                                                                                                                                                                             378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      s; Score 1193.5;
pred. No. 2.8e
57; Mismatches
                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A2691FE569E80396 CRC64;
 Ξ.
                                                   Haemosporida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Haemosporida;
                                                                                                                                      569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l part of the post of Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .5; DB 5;
2.8e-52;
hes 74;
                                                                                                                                      Å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Plasmodium
                                                    Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   precursor to
m falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             569;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                     413
                                                                                                                                                                                                                                                                                                                                                                                  182
                                                                                                                                                                                                                                                                                                                                                                                                                        141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   81
                                                                                                                                                                                                                                                       362
                                                                                                                                                                                                                                                                                                302
                                                                                                                                                                                                                                                                                                                                                                                                     293
                                                                                                                                                                                                                                                                            472
                                                                                                                                                                                                                                                                                                                                         242
                                                                                                                                                                                                                                                                                                                                                              353
                                                                                                                                                                                                                                                                                                                                                                                                                                              233
```

```
ğ
                                                                                                                                                 밁
                                                                                                                                                                  Q
                                                                                                                                                                                       닭
                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                       SQ SQ
              Q
                                    밁
                                                    Š
                                                                        밁
                                                                                                            밁
                                                                                                                             δÃ
                                                                                                                                                                                                                                             Š
밁
                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                          Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                   "Sequence conservation in the C-terminal part of the precursor to the major merozoite surface proteins (MSP1) of Plasmodium falciparum from field isolates.";
MOI. Biochem. Parasitol. 59:95-100(1993).
EMBL; D13349; BAA02610.1; -
                                                                                                                                                                                                                                                                                                                                   Pfam;
                                                                                                                                                                                                                                                                                                                NON_TER
                                                                                                                                                                                                                                                                                                                        EGF-like domain; Merozoite.
                                                                                                                                                                                                                                                                                                                                             InterPro;
                                                                                                                                                                                                                                                                  Local Sin
hes 224;
                                    473
                                                      303
                                                                        414
                                                                                           243
                                                                                                             354
                                                                                                                               183
                                                                                                                                                                    142
                                                                                                                                                                                       234
533
                 363
                                                                                                                                                 294
                                                                                                                                                                                                                            175
                                                                                                                                                                                                                                                                                                                                  Pro; IPR000561; E
PF00008; EGF; 1.
                                                                                                                                                                                                         82
                                                                                                                                                                                                                                               22
                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                          CFRHLDEREECKCLLNYKQEGDKCVENPNPTCNENNGGCDADAKCTEEDSGSNGKKITCE
                                                                                                                                                GISYYEKVLAKYKDDLESIKKVIKEEKEEPSSPPTTPPSPAKTDEQKKESKFLPFLTNIE
                                                                                                                                                            CTKPDSYPLFDGIFCS
                 CTKPDSYPLFDGIFCS
                                    KKLINDDTKKDMLGKLLSTGLV-QNFPNTIISKLIEGKFQDMLNISQHQCVKKQCPENSG
                                                                                  ADLSTDYNHUNLLTKFLSTGMVFENLAKTVLSNLLDGNLQGMLNISQHQCVKKQCPQNSG
                                                                                                       TLYNNLVNKIDDYLINLKAKINDCNVEKDEAHVKITKLSDLKAIDDKIDLFKNTNDFEAI
                                                                                                                     TLYKTVNHKIDLFVIHLEAKVLNYTYEKSNVEVKIKELNYLKTIQDKLADFKKNNNFVGI
                                                                                                                                                                                                                                                                                                       569 AA;
                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                       64459 MW;
                                                                                                                                                                                                                                                                        57.9%;
59.6%;
                                                                                                                                                                                                                                                                                                                                           EGF-like.
                 378
548
                                                                                                                                                                                                                                                                  57;
                                                                                                                                                                                                                                                                 Score 1193.5; DB 5;
Pred. No. 2.8e-52;
7; Mismatches 74;
                                                                                                                                                                                                                                                                                                      ED4284B2867C9703 CRC64;
                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                21;
                                                                                                                                                                                                                                                                 Gaps
                                                     362
                                                                                                            .413
                                                                                                                                                                  182
                                                                                                                                                                                                      141
                                                                        472
                                                                                         302
                                                                                                                              242
                                                                                                                                                353
                                                                                                                                                                                      293
                                                                                                                                                                                                                           233
                                                                                                                                                                                                                                             81
```

Search completed: June 11, 2003, 16:04:32 Job time: 82 secs